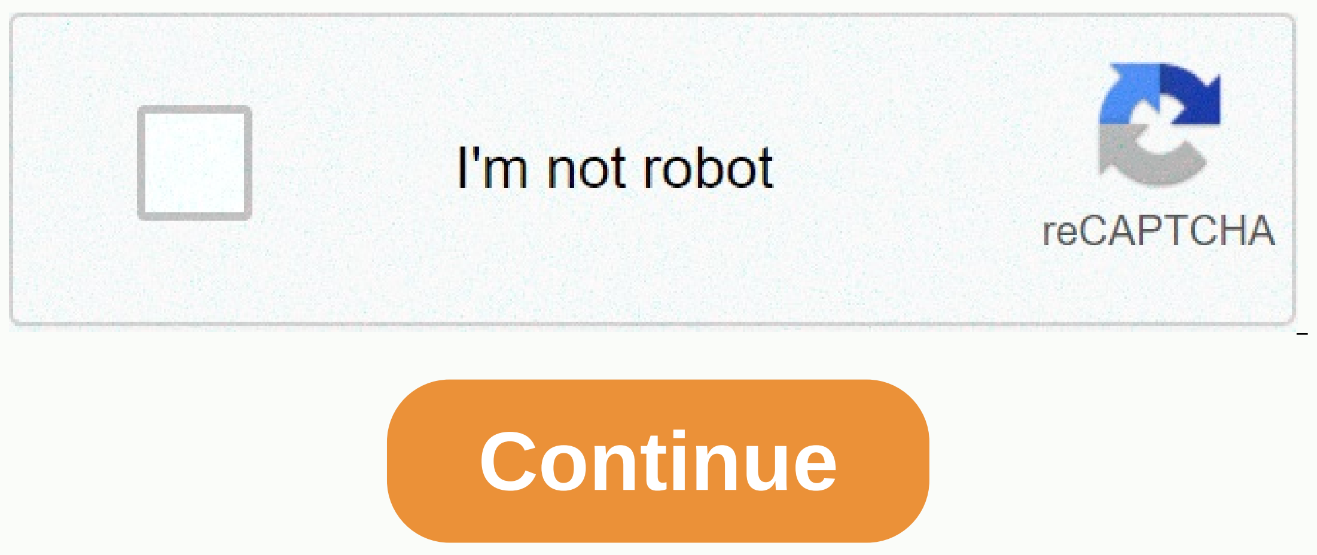
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Each problem is mentioned step by step in solving. The concepts are very clear and incorporated in an understandable way. Lesson 1: Multiply by dozens of lessons 2: Estimate Products Lesson 3: Research • Field Models and Partial Products Lesson 4: Multiply by partial products Mid-Chapter Checkpoint Lesson 5: Multiply by Regroup lesson 6: Choose a multiplication method lesson 7: Problem solving • Multiply 2-digit numbers Review /Test Common Core – Page 149 Multiply by Tens Choose a method. Then find the product. Question 1. 16 × 60 = 960 Use the half-life and doubling strategy. Find half of 16: 16 ÷ 2 = 8. Multiply this number by 60: 8 × 60 = 480 Double this result: 2 × 480 = 960 Answer: 960 Explanation: Use the halving and doubling strategy. Find half of 16: 16 ÷ 2 = 8. Multiply this number by 60: 8 × 60 = 480 Double this result: 2 × 480 = 960 Question 2. 80 × 22 = ______ Answer: 1760 Explanation: Multiply 80 x 22 U 80 as 80 80 x 80 x 22 = (22 x 8) tens = 176 tens = 176 x 10 = 176 170 x 10 = 1760 80 x 22 = 1760 Questions 3 thinking. 30 × 52 = ______ Answer: 1560 Explanation: Use the associative property You 30 see as 3 x 10 30 x 52 = (3 3 2 3 x 10) x 52 = 3 x (10 x 52) = 3 x 520 = 1560 30 x 52 = 1560 Question 4. 60 × 20 = ______ Answer: 1200 Explanation: 60 x 20 Use the half-doubling and doubling strategy half of 60 to make the problem easier 60/2 = 2 = 2 2 30 Multiply by 20 30 x 20 = 600 Double the 600 2 x 600= 1200 60 x 20 = 1200 Question 5. 40 × 35 = ______ Answer: 1400 Explanation: By using the associative property 40 x 35 You 40 as 4 x 10 40 x 1 35 = (4 x 10) x 35 = 4 x (10 x 35) = 4 x 350 = 1400 40 x 35 = 1400 Question 6. 10 × 90 = ______ Answer: 900 Explanation: 10 x 90 Using the site value method you see 90 as 9 tens 10 x 90 = (10 x 9) tens = 90 tens = 10 x 90 = 900 = 900 Question 7. 31 × × = ______ Answer: 1,550 Explanation: Use the place value method to multiply 31 x 50S 50s as 5 tens 31 x 50 = 31 x 5 tens = 155 tens = 1,550 31 x 50 = 1,550 problem-solving question 8 thinking. Kenny bought 20 packs of baseball cards. There are 12 cards in each package. How many tickets did Kenny buy? ______ maps Answer: 240 cards Explanation: Of the data given, Kenny bought 20 packs of basketball cards There are 12 cards in each package = 12 x 20 cards Use the associative feature You write 20 as 2 x 10 12 x 20 = 12 x (2 x 10) = (12 x 2) x 10 = 10 = 240 cards Kenny bought 240 cards Question 9. The Hart family drove 10 hours to their vacation spot. They averaged 48 miles an hour. How many kilometers did they drive in total? ______ miles Answer: 480 miles Explanation: According to data given, Hart family drove 10 hours to their vacation spot Average speed per hour is = 48 miles Total miles = 48 x 10 Use the halving and doubling strategy Half of the 48 to make the problem simpler 48/2 = 24 Multiply 24 by 10 = 24x 10 = 240 Double value = 2 x 240 = 480 miles Total miles driven by heart family = 480 miles. Common Core – Page 150 Les Check Question 1. For the school game, 40 rows of chairs are set up. There are 22 seats in each row. How many seats are there in total? Options: a. 800 b. 840 c. 880 d. 8800 Answer: c. 880 Explanation: According to the data given For the school game, 40 rows of seats are available. 22 seats are available in each row. Then total chairs in school games are = 22 x 40 By using the place value method You are thinking of 4 tens 22 x 40 = 22 x 4 tens = 88 tens = 880 Total chairs at school are = 880 Question 2. At West School, there are 20 classrooms. Each classroom has 20 students. How many students are at West School? Options: a. 40 b. 400 c. 440 d. 4,000 Answer: b. 400 Explanation: From the data given, Total classrooms in west school = 20 Number of pupils per class = 20 Dan, total number of students at the West School = 20 x 20 By using the associative property You think of 20 as 2 x 10 20 x 20 = 20 x (2 x 10) = (20 x 2) x 10 =(40) x 10 =400 Total number of students at West School = 400 Spiral Review 3. Alex has 48 stickers. This is 6 times the number of stickers Max has. How many stickers does Max have? Options: a. 6 b. 7 c. 8 d. 9 Answer: c. 8 Explanation: According to the data, Alex has 48 stickers That means, X= 48 This is 6 times the number of stickers max has = Y = 6X = 48 Dan, number of stickers with Max = Y = X = 48/6 = 8 Number of stickers with Max = Y = 8 Stickers. Question 4. Ali's dog weighs 8 times as much as her cat. Together, the two pets weigh 54 pounds. How much does Ali's dog weigh? Options: a. £6 b. £42 c. £46 d. £48 Answer: d. £48 Explanation: the data given, Ali's cat weight = X Ali's dog weight = 8 times as much as Ali's Ali's = 8X Together, the two pets weight = (X + 8X) = 54 pounds = 9X = 54 pounds = X = 54/9 pounds = 6 pounds Dan, Ali's dog weight = 8X =8 x 6 = 48 pounds. Question 5. Allison has 3 containers with 25 crayons in each. She also has 4 boxes of markers with 12 markers in each box. She gives 10 crayons to a friend. How many crayons and markers does Allison have now? Options: a. 34 b. 113 c. 123 d. 133 Answer: b. 113 Explanation: According to the data given, Allison has 3 containers with 25 color pot Lodes in each = X = 3 x 25 = 75 All has 4 boxes of markers with 12 markers in each box = Y = 4 x 12 = 48 Allison gives 10 crayons to a friend = Z = 75-10 = 65 Now, total number of crayons and markers with Allison = Y + Z = 48 + 65 = 113 Question 6. The state of Utah covers 82,144 square miles. The state of Montana covers 145,552 square miles. What is the total area of the two states? Options: a. 63,408 square miles b. 223,408 square miles c. 227,696 square miles d. 966,992 square miles Answer: c. 227,696 square miles Explanation: From the data given, The state of Utah covers 82,144 square miles The state of Montana covers 145,552 square miles Then, Total area of the two states = 82,144 + 145,552 The total area of two states = 227,696 square miles. Page 153 Question 1. To estimate the product of 62 and 28 by rounding, how would you round up the factors? What would be the estimated product? about _____ Answer: 1800 Explanation: By using rounding and mental mathematics Treasure 62 x 28 First, around each factor 62 x 28 60 x 30 Use mental mathematics 6 x 3 = 18 60 x 30 = 1800 So, estimated product of 62 and 28 = 1800 Estimates the product. Choose a method. Question 2. 96 × 34 Estimate: _____ Answer: 3000 Explanation: Use mental mathematics and compatible numbers 96 x 34 100 x 30 Use mental mathematics 1 x 30 = 30 100 x 30= 3000 Question 3. 47 × $39 Estimate: $_____ Answer: 2000 Explainer: Round to the nearest ten 47 x $39 50 x $40 50 x $4 = $200 50 x $40 = 2000 Question 4. 78 × 72 Estimate: _____ Answer: 5600 Explanation: Use rounding and mental mathematics Around each factor 78 x 72 80 x 70 Use mental mathematics 8 x 7 = 56 80 x 70 = 5600 Question 5. 41 × 78 Estimate: _____ Answer: 3200 Explanation: Use compatible numbers and mental mathematics 41 x 78 40 x 80 Use mental mathematics 40 x 8 = 320 40 x 80 = 3200 Question 6. 51 × 73 Estimate: _____ Answer: 3500 Explanation: Round to the nearest ten 51 x 73 50 x 70 = 3500 Question 7. 34 × 80 Estimate: _____ Answer: 2400 Explanation: Around each factor 34 x 80 30 30 x 80 3 x 8 = 240 30 x 80 = 2400 Practice: Copy and loose The product estimate. Choose a method. Question 8. 61 × 31 Estimate: _____ Answer: 1800 Explanation: Round to the nearest ten 61 x 31 60 x 30 = 1800 Question 9. 52 × 68 Estimate: _____ Answer: 3500 Explanation: Around each factor 52 x 68 50 x 70 Use mathematics 5 x 7 =35 50 x 70 70 3500 Question 10. 26 × 44 Estimate: _____ Answer: 1200 Explanation: Round to the nearest tens 26 x 44 30 x 40 = 1200 Question 11. 57 × $69 Estimate: $_____ Answer: $4200 Explanation: Around each factor 57 x $69 60 x $70 Use mental math 6 x $7 = $42 60 x $70 = $4200 Find two possible factors for the estimated product. Question 12. 2,800 Type below: ___________ Answer: 2800 Explanation: Let's consider 7 x 4 = 28 70 x 40 = 2800 Question 13. 8.100 Type below: ___________ Answer: 8,100 Explanation: Let's take 9 x 9 = 81 90 x 90 = 8,100 question 14. 5.600 Type below: ___________ Answer: 5,600 Explanation: Let's consider 7 x 8 = 56 70 x 80 = 5,600 Question 15. 2,400 Text below: ___________ Answer: 2,400 Explanation: Let's take 4 x 6 = 24 40 x 60 = 2400 Or 3 x 8 = 24 30 x 80 = 2,400 Question 16. Mr. Parker jogs for 35 minutes a day. He jogs 5 days in week 1, 6 days in week 2 and 7 days in week 3. How many minutes does he jog? about _____ minutes Answer: approximately 630 minutes Explanation: From the data given, mr. Parker jogs per day = 35 minutes He jogs 5 days in week 1 = 5 x 35 = 175 minutes 6 days in week 2 = 6 x 35 = 210 minutes 7 days in week 3 = 7 x 35 = 245 minutes Total minutes jog by mr. Parker = week 1 + week 2 + week 3 = 175 + 210 + 245 = 630 minutes So, total minutes of jogging by Mr Parker = 630 minutes Question 17. There are 48 beads in a package. Candice bought 4 packages of blue, 9 packages of gold, 6 packages of red and 2 packages of silver beads. How many beads did Candice buy? about _____ beads Answer: approximately 1008 beads Explanation: According to the data given, 48 beads are in a package Candice bought 4 packages of blue beads = 4 x 48 = 192 9 packages of gold beads = 9 x 48 = 432 6 packets of red beads = 6 x 48 = 288 2 packets of silver beads = 2 x 48 = 96 Total beads purchased by Candice = 192 + 432 + 288 + 96 = 1008 beads So , total beads purchased by Candice = 1008. Page 154 Question 18. On average, a refrigerator door is opened 38 times a day. Len has two refrigerators in his house. Based on this average, about how often in a period of 3 weeks are the refrigerator doors opened? about _____ times Answer: about 1600 times Explanation: Of the data given, On average, a fridge door is opened per day = 38 times 3 weeks = 7 x 3 = 21 Then a refrigerator door is opened every 21 days = 21 x 38 = 798 times Len has 2 refrigerators in his house Then two refrigerators door are opened every 21 days = 2 x 798 = 1596 So times , in a period of 3 – week refrigerator door is opened about 1600 times Question 19. The cost of running a refrigerator is about $57 a year. About how much will it have cost to walk by the time it's 15 years old? about $ _____ Answer: 1200 Explanation: According to the data, The cost of running a refrigerator per year = $57 to run a fridge by the time it's 15 years old = $57* * Round to the nearest tens $57 x 15 $60 x 20 Use mental math $6 x 2 = 12 $60 x 20 = 1200 Question 20. If Mel opens his fridge door 36 times a day, about how often will it be opened in April? Will the exact answer be more than or less than the estimate? Explain. Type below: _____________ Answer: 1200 Explanation: From the given data, Mel opens his refrigerator door per day = 36 times Number of days in April month = 30 days Refrigerator door opened in April month = 36 * 30 Around the factors 36 x 30 40 x 30 = 1200 Question 21. Represent a problem what question could you write for this answer? The estimated product of two numbers, which are not multiples of ten, is 2,800. Type below: _____________ Answer: 2800 Explanation: Let's take 1. 38 × 21 √ √ 40 × 20 = 800 2.800 = 42 x 68 √ √ √ 40 x 70 = 2800 Question 22. What is a reasonable estimate for the product? Write the estimate. An estimate can be used more than once. 26 × 48 _________ 28 × 21 _________ 21 × 22 _________ 51 × 26 __________ Answer: 25 x 20_____ 50 = 1250 30 x 20 = 600 20 x 20 = 400 50 x 25 = 1250 Explanation: 26 x 48 -> 25 x 50 = 1250 28 x 21 -> 30 x 20 = 600 21 x 22 -> 20 x 20 = 400 51 x 26 -> 50 x 25 = 1250 Common Core – Page No. Choose a method. Question 1. 38 × 21 38 × 21 √ √ 40 × 20 800 Answer: 800 Explanation: 38 × 21 √ √ 40 × 20 800 Question 2. 63 × 19 Estimate: _____ Answer: 1200 Explanation: 63 x 19 60 x 20 = 1200 Estimated product of 63 x 19 = 1200 Question 3. 27 × $42 Estimate: $ _____ Answer: $1000 Explanation: 27 × $42 25 x $40 = $1000 Estimated product of 25 x $42 = $1000 Question 4. 73 × 67 Estimate: _____ Answer: 4900 Explanation: 73 × 67 70 x 70 = 4900 Estimated product of 73 x 67 = 4900 Question 5. 37 × $44 Estimate:$ _____ Answer: $1600 Explanation: 37 × $44 40 x $40 = $1600 Estimated product of 37 x $44 = $1600 Question 6. 85 × 71 Estimate: _____ Answer: 6300 Explanation: 85 × 71 90 x 70 = 6300 Estimated product of 85 x 71 = 6300 Question 7. 88 × 56 Estimate: _____ Answer: 4950 Explanation: 88 × 56 90 x 55 = 4950 Estimated product of 90 x 55 = 4950 Question 8. 97 × 13 Estimate: _____ Answer: 1,000 Explanation: 97 × 13 100 x 10 = 1,000 Question 9. 92 × 64 Estimate: _____ Answer: 5850 Explanation: 92 × 64 90 x 65 = 5850 Problem Solving Question 10. A dime has a diameter of about 18 millimeters. How many millimetres long would be a row of 34 dimes? about _____ millimeters Answer: about 600 millimeters Explanation: From the data given, A dime has a diameter of about 18 millimeters Then, 34 dimes diameter = 18 * 34 18 x 34 20 x 30 = 600 So, 34 dimes have a diameter of about 600 millimeters long Question 11. Half a dollar has a diameter of 31 millimeters. How many millimeters long would be a row of 56 half dollars? about _____ millimiters Answer: 1800 millimeters Explanation: According to the data given, Half – dollar has a diameter of about 31 millimeters Then, 56 half dollars diameter = 31 * 56 31 * 56 30 * 60 So, 56 half dollars have a diameter of about 1800 millimeters long. Common Core – Page 156 Les Check Question 1. What is the best estimate for the product 43 × 68? Options: a. 3,500 b. 2,800 c. 2,400 d. 280 Answer: b. 2,800 Explanation: Round to the nearest tens 43 x 68 40 x 70 Use mental mathematics 4 x 7 = 28 40 x 70 = 2800 Estimated product of 43 x 68 = 2800 Question 2. Marissa burns 93 calories every time she plays fetch with her dog. She plays with her dog once a day. About how many calories will Marissa burn playing with her dog in 28 days? Options: a. 4,000 b. 2,700 c. 2,000 d. 270 Answer: b. 2,700 Calories Explanation: From the data given, Marissa burned calories every time she plays fetch with her dog = 93 calories Dan, Marissa burned calories in 28 days while playing catch up with her dog = 28 x 93 Round to the nearest tens 28 x 93 30 x 90 Dan, estimated calories burned in 28 days by Marissa = 2700 calories Spiral Review Question 3. Use the model to find 3 × 126. Options: a. 368 b. 378 c. 468 d. 478 Answer: b. 378 Explanation: From the figure above, 3 x 126 = 3 x 100 + 3 x 20 + 3 x 6 = 300 + 60 + 18 = 378 3 x 126 = 378 Question 4. A store sells a certain brand of jeans for $38. One day, the store sold 6 jeans from that brand. How much money did the store make selling the 6 pairs of jeans? Options: a. $188 b. $228 c. $248 d. $288 Answer: b. $228 Explanation: According to the data given, a store sells a certain brand of jeans for rupees = $38 One day, the store sold 6 jeans from that brand = 6 x $38 6 x $38 = $228 The total amount of 6 pairs of jeans = $228 Question 5. The Gateway Arch in St. Louis, Missouri, weighs about 20,000 tons. What amount can be the exact number of tons that the Arch weighs? Options: a. 31,093 tonnes b. 25,812 tonnes c. 17,246 tonnes d. 14,096 tonnes Reply: c. 17,246 tons Explanation: Of the data given, Gateway Arch in St.Louis, Missouri weight = about 20,000 tons Of options available, 17,246 tons is closer to 20,000 tons then, the exact number of tons the Arches = 17,246 tons is Call 6. What's another name for 23,000? Options: a. 23,000,000 b. 2,300,000 c. 230,000 d. 23,000 Answer: c. 230,000 Explanation: According to the data, Another name for 23 ten thousand = 23 x 10,000 = 230,000 Another name for 23 ten thousand = 2.30,000 Page No. 159 Find the product. Question 1. 16 × 19 16 × 19 = _____ Answer: 304 Explanation: 16 x 19 = 304 Question 2. 18 × 26 18 × 26 = _____ Answer: 468 Explanation: 200 + 160 + 60 + 48 = 468 3. 27 × 39 27 × 39 = ______ Answer: 1,053 1,053 600 + 210 + 180 +63 = 1053 Draw a model to represent the product. Then include the product. Question 4. 14 × 16 = ______ Answer: 224 Explanation: 100 + 40 + 60 + 24 = 224 Question 5. 23 × 25 = ______ Answer: 575 Explanation: 400 + 60 + 100 + 15 = 575 Question 6. Explain how modeling partial products can be used to find larger-number products. Type below: ___________ Answer: You use mental mathematics to find the partial products and then find the sum of the partial products. Notes: Question 7. Emma bought 16 packs of sandwiches for a party. There were 12 rolls in one package. After the party, there were eight rolls left. How many sandwiches have been eaten? Explain. ______ rolls Answer: 184 sandwiches were eaten Explanation: From the data given, Emma bought 16 rolls for a party There were 12 rolls in a package Dan, total rolls = 16 x 12 = 192 100 + 60 + 20 + 12 =192 After the party there were 8 rolls over Dan, total eaten sandwiches are = 192 - 8 = 184 Page no. Jamal and Kim used different ways to solve 12 × 15 using partial products. Whose answer makes sense? Whose answer is nonsense? Explain your reasoning. Jamal's Work 100 + 20 + 10 = 130 Kim's Work 120 + 60 = 180 a. For the answer that is nonsense, write an answer that makes sense. Type below: _____________ Answer: a. Jamal's work makes nonsense. 100 + 20 + 50 + 10 = 180 it makes sense Question 8. B. Look at Kim's method. Can you think of another way kim can use the model to find the product? Explain. Type below: ___________ Answer: Other method: 12 x 15 10 x 12 = 120 5 x 12 = 60 120 + 60 = 180. Explanation: Kim follows another method to find 12 x 15 Ie, 100 + 50 = 150 20 + 10 = 30 Dan, 150 + 30 =180 12 x 15 = 180 Question 9. Look at the model in 8b. How would the partial products change if the product was 22 × 15? Explain why you think the products are changing. Type below: __________ Answer: 330 Explanation: According to the 8b method 22 x 15 =330 200 + 100 = 300 20 + 10 = 30 Now, 300 + 30 = 330 Finally, 22 x 15 = 330 The factor 15 has been increased in the current problem. So, the product also rises for 15 x 22. Common Core – Page 161 area models and partial products draw a model to display the product. Then include the product. Question 1. 13 × 42 Answer: Question 2. 18 × 34 = ______ Answer: 300 + 40 + 240 + 32 = 612 Question 3. 22 × 26 = ______ Answer: 400 + 120 + 40 + 12 = 572 Question 4. 1 5 × 33 = ______ Answer: 300 + 30 + 150 + 15 = 495 Question 5. 23 × 29 = ______ Answer: 400 + 180 + 60 + 27 = 667 Question 6. 19 × 36 = ______ Answer: 300 + 60 + 270 + 54 = 684 Troubleshooting Question 7. Sebastian made the next model to find the product 17 × 24. Is his model correct? Explain. a. yes b. Answer: b. no Explanation: 200 + 40 + 140 + 28 = 408 Question 8. Every student in ms. Sike's kindergarten has a box of crayons. Every box has Crayons. If there are 18 students in Ms. Sike's class, how many crayons are there in total? ______ crayons Answer: 648 crayons Explanation: From the information given, Every student in Ms. Sike's kindergarten has a box of crayons in each box = 36 Crayons Number of students in Mr. Sike.' Sike's class = 18 students Total crayons = 18 x 36 300 + 60 + 240 + 48 = 648 Common Core - Page 162 Les Check Question 1. Which product represents the model below? Options: a. 161 b. 230 c. 340 d. 391 Answer: d. 391 Explanation: 200 + 30 + 140 + 21 = 391 17 x 23 = 391 Question 2. Which product represents the model below? Options: a. 219 b. 225 c. 244 d. 275 Answer: b. 225 Explanation: 130 + 20 + 65 + 10 = 225 15 x 15 = 225 Spiral test question 3. Mariah builds a tabletop with square tiles. There are 12 rows of tiles and 30 tiles in each row. How many tiles does Mariah use in total? Options: a. 100 b. 180 c. 360 d. 420 Answer: c. 360 Explanation: From the data given, Mariah builds a tabletop with square tiles Square contains 12 rows of tiles and 30 tiles in each row = 12 x 30 12 x 30 = 360 tiles Total tiles used by Mariah = 360 tiles Question 4. Trevor bakes 8 batches of cookies, with 14 cookies in each batch. He sets aside 4 cookies from each batch for a baking sale and puts the rest in a jar. How many cookies does Trevor put in the jar? Options: a. 112 b. 80 c. 50 d. 32 Answer: b. 80 Explanation: According to the data given, Number of cookies baked by Trevor = 8 batches Number of cookies in each batch = 14 cookies So, total cookies = 14 x 8 = 112 Trevor puts 4 cookies from each batch for a bake = 8 * 4 = 32 cookies are reserved for a bowl Trevor kept rest of cookies in a pot = 112 - 32 = 80 , 80 cookies are put in the jar by the Trevor Question 5. Li feeds her dog 3 cups of food a day. How many cups of food does her dog eat in 28 days? Options: a. 60 cups b. 70 cups c. 80 cups d. 90 cups Answer: c. 80 cups Explanation: According to the data, Li feeds her dog per day = 3 cups of food Then Li feeds her dog 28 days = 3 x 28 = 84 cups of food So li feeds her dog with 84 cups of food in 28 days Question 6. Which symbol makes the number meaning true? 4 ■ 0 = 0 Options: a. + b. – c. × d. ÷ Answer: c. × Explanation: 4 x 0 = 0 Page No. Look 24 × 34. _____ Answer: 816 Explanation: Question 2. 1 2 × 1 2 ——— _____ Answer: 144 Explanation: Question 3. 3 1 × 2 4 ——- _____ Answer: 744 Explanation: Question 4. 2 5 × 4 3 ——- _____ Answer: 1,075 Explanation: Question 5. 3 7 × 2 4 ——- _____ Answer: 888 Explanation: Question 6. 5 4 × 1 5 ——- _____ Answer: 810 Explanation: Question 7. 8 7 × 1 6 ——- _____ Answer: 1,392 Explanation: Question 8. 6 2 × 5 6 ——- _____ Answer: 3.472 Notes: Question 9. 4 9 × 6 3 ——- _____ Answer: 3,087 Explanation: Practice: Copy and Record the product. Question 10. 38 × 47 _____ Answer: 1,786 Explanation: Question 11. 46 × 27 _____ Answer: 1,242 Explanation: Question 12. 72 × 53 _____ Answer: 3,816 Explanation: Question 13. 98 × 69 _____ Answer: 6,762 Explanation: Question 14. 53 × 68 _____ Answer: 3,604 Explanation: Question 15. 76 × 84 _____ Answer: 6,384 Notes: Question 16. 92 × 48 _____ Answer: 4,416 Explanation: Question 17. 37 × 79 _____ Answer: 2,923 Explanation: Reason Abstract Algebra Find the unknown digits. Add to the problem. Question 18. Type below: ____________ Answer: 1,824 Explanation: Question 19. Type below: ____________ Answer: 7,954 Explanation: Question 20. Type below: ____________ Answer: 1,908 Explanation: Question 21. Type below: ______________ Answer: 952 Explanation: Page#Question 22. Use Charts A fruit warehouse ships 15 boxes of grapefruit to a store in Santa Rosa, California. What is the total weight of the shipment? ______ pounds Answer: 1,275 pounds Explanation: From the data given, A fruit packing warehouse is shipping 15 boxes of grapefruit store in Santa Rose, California Grapefruit weight per box = 85 pounds Total weight of shipment = 85 x 15 So, the total weight of the shipment = 1275 pounds Demand 23. How many fewer 13 boxes of tangelos than 18 boxes of mandarins weigh? ______ pounds Answer: £450 Explanation: According to the data given, Tangelos weight per box = 90 pounds Dan, the weight of the 13 boxes of tangelos = 90 x 13 And, the weight of the 18 boxes of tangelos = 90 x 18 1620 - 1170 = 450 So, 13 boxes of tangelos weight are 450 pounds less than 18 boxes of tangelos weight 24. What is the weight of 12 boxes of oranges? ______ pounds Answer: 1,080 pounds Explanation: The weight of oranges per box = 90 pounds then, weight of 12 boxes of oranges = 90 x 12 So, weight of 12 boxes of oranges = 1,080 pounds Question 25. Every person in the United States eats about 65 fresh apples a year. Based on this estimate, how many apples eat 3 families of 4 food per year? ______ apples Answer: 780 apples Explanation: From the data given, Each person in the United States eats fresh apples per year = 65 3 families of 4 people = 3 x 4 = 12 people Then, the number of apples eaten by 12 people = 65 x 12 So, the total number of apples eating with 12 people per year = 780 Question 26. The product 26 × 93 is larger than 25 × 93. How much bigger? Explain how you know without multiplying. ______ Answer: The difference is 93 26 x 93 is a group more than 25 x 93 Question 27. Margot wants to use sub-products to find 22 × 17. Write the numbers in the boxes to display 22 × 17. Type below: ____________ Answer: Explanation: 22 x 17 (20 + 2) x 17 20 x 17 + 2 x 17 20 x (1 0 + 7) + 2 x (10 + 7) (20 x 10) + (20 x 7) + (2 x 10) + (2 x 7) Common Core – Page No. 167 Multiply Partial products Register the product. Question 1. 2 3 × 7 9 ——— 1, 4 0 0 2 1 0 1 8 0 + 2 7 —— 1, 8 1 7 Answer: 1, 8 1 7 Explanation: 2 3 × 7 9 ——— 1, 4 0 0 2 1 0 1 8 0 + 2 7 —— 1, 8 1 7 Question 2. 5 6 × 3 2 ——- ______ Answer: 1,792 Explanation: Question 3. 8 7 × 6 4 ——- ______ Answer: 5,568 Explanation: Question 4. 3 3 × 2 5 ——- ______ Answer: 825 Explanation: Question 5. 9 4 × 12 ——- ______ Answer: 1,128 Explanation: Question 6. 5 1 × 7 7 ——- ______ Answer: 3,927 Explanation: Question 7. 6 9 × 4 9 ——- ______ Answer: 3,381 Explanation: Question 8. 8 6 × 8 4 ——- ______ Answer: 7,224 Explanation: Question 9. 9 8 × 4 2 ——- ______ Answer: 4,116 Explanation: Question 10. 7 3 × 3 7 ——- ______ Answer: 2,701 Explanation: Question 11. 8 5 × 5 1 ——- ______ Answer: 4,335 Explanation: Troubleshooting Question 12. Evelyn drinks 8 glasses of water a day, that's 56 glasses of water a week. How many glasses of water does she drink in a year? (1 year = 52 weeks) _______ glasses Answer: 2,912 glasses Explanation: According to the data given Evelyn drinks 8 glasses of water per day Evelyn drinks water per week = 56 glasses Then the number of glasses per 52 weeks = 52 x 56 Total number of glasses of water drinking by Evelyn per year = 2912 glasses water Question 13. Joe wants to use the Hiking Club's money to buy new walking sticks for each of his 19 members. The sticks cost $26 each. The club has $480. Is this enough money to buy each member a new walking stick? If not, how much more money is needed? Is the money enough? _______ How much more is needed? _______ Answer: This amount is not enough to buy walking sticks Still, $14 amount is needed to buy walking sticks Explanation: From the data given, Joe wants to use the Hiking club funds to buy new walking sticks for each of the 19 members Cost per each stick = $26 Total walking sticks cost per 19 members = $26 x 19 Total cost for walking sticks for 19 members = $494 The club has = $480 This amount is not enough to buy walking sticks for 19 members = $494 The club has = $480 This amount is not enough to buy walking sticks for 19 members = $494 The club has = $480 This amount is not enough to buy walking sticks for 19 members = $494 The club has = $480 This amount is not enough to buy walking sticks for 19 members = $494 The club has = $480 This amount is not enough to buy walking sticks for 19 members = $494 The club has = $480 This amount is not enough To buy walking sticks for 19 members = $494 The club has = $480 This amount is not enough to buy walking sticks for 19 members = $49 Still, $14 amount is needed to buy walking sticks Common Core - Page number 168 Lesson Check Question 1. A carnival snack booth made $76 selling popcorn in one day. It made 22 times as many sales cotton candy. How much money did the snack booth make selling cotton candy? Options: a. $284 b. c. $1,562 d. $1,672 Answer: d. $1,672 Explanation: According to the data given, A carnival snack booth popcorn made in a day = $76 It made 22 times as many selling cotton candy Than, total sales of cotton candy made by snack booth = $76 x 22 So, $1672 cash snack booth gets for selling cotton candy Call 2. What are the partial products of 42 × 28? Options: a. 800, 80, 40, 16 b. 800, 16 c. 800, 40, 320, 16 d. 80, 16 Answer: c. 800, 40, 320, 16 Explanation: So, sub-products of 42 x 28 are 800, 800, 320, 16 Spiral Examination Question 3. Last year, the city library collected 117 used books for the shelves. This year it collected 3 times as many books. How many books has it collected this year? Options: a. 832 b. 428 c. 351 d. 72 Answer: c. 351 Explanation: From the data given, Last year, the number of books collected by the city library by the shelves = 117 books This year, it collected 3 times as many books = 3 x 117 =351 books Total number of books collected by the city library for this year = 351 books Question 4. Washington Elementary has 232 students. Washington High has six times as many students. How many students does Washington High have? Options: a. 1,392 b. 1,382 c. 1,292 d. 1,281 Answer: a. 1,392 Explanation: According to the data given, The number of students in Washington elementary = 232 students Washington High has 6 times as many students = 6 x 232 = 1392 Total number of students in Washington High = 1392 students Ask 5. What are the partial products of 35 × 7? Options: a. 10, 12 b. 21, 35 c. 210, 35 d. 350, 21 Answer: c. 210, 35 Explanation: Sub-products of 35 x 7 are 210, 35 Question 6. Shelby has 10 five-dollar bills and 13 $10 bills. How much money does Shelby have in total? Options: a. $15 b. $60 c. $63 d. $180 Answer: d. $180 Explanation: Of the data given, Shelby has ten $5 accounts and thirteen $10 accounts = (10 x $5) + (13 x $10) = ($50) + ($130) =$180 Total money with Shelby = $180 Page No. 169 Question 1. Explain how to find 40 × 50 using mental math. Type below: _________ Answer: 200 Explanation: 40 x 50 Using mental mathematics 4 x 5 = 20 40 x 50 = 200 Question 2. What is the first step in estimating 56 × 27? Type below: __________ Answer: 18 centimeters Explanation: Round to the nearest values. So, the first step of the estimated 56 x 27 is rounding to the nearest values that 60 x 30 choose a method. Then find the product. Question 3. 35 × 10 = _____ Answer: 350 Explanation: Using the method of place value you take 10 as 1 ten 35 x 10 = 35 x 1 ten = 35 ten 35 35 x 10 = 350 Question 4. 19 × 20 = _____ Answer: 380 Explanation: 19 x 20 By using the associative property You think of 20 as (2 x 10) 1 9 x 20 = 19 x (2 x 10) = (19 x 2) x 10 = 38 x 10 19 x 20 = 380 Question 5. 12 × 80 = _____ Answer: 960 Explanation: Use the halving and doubling strategy half of 80 to make the problem easier 80/ 2 = 40 Multiply 40 with 12 40*12 = 480 Double the 480 2*480= 960 12*80 = 960 Question 6. 70 × 50 = _____ Answer: 3,500 Explanation: 70 x 50 Using the place value method you take 50 as 5 tens 70 x 50 = 70 x 5 tens = 350 tens 70 x 50 = 3,500 Question 7. 58 × 40 = _____ Answer: 2,320 Explanation: By using the associative property you think of 40 (4 x 10) 58 x 40 = 58 x (4 x 10) = (58 x 4) x 10 = 232 x 10 58 x 40 = 2,320 Question 8. 30 × 40 = _____ Answer: 1,200 Explanation: Use the halving and doubling strategy of the 40 to make the problem easier 40/ 2 = 20 Multiply 20 by 30 20*30 = 600 Double the 600 2*600= 1200 30*40 = 1,200 Question 9. 14 × 60 = _____ Answer: 840 Explanation: Using the place value method, use the place value method to take 60 x 14 x 60s = 14 x 6 tens = 84 tens 14 x 60 = 840 Question 10. 20 × 30 = _____ Answer: 600 Explanation: By using the associative property you 30 as (3 x 10) 20 x 30 = 20 x (3 x 10) = (20 x 3) x 10 = 11. 16 × 90 = _____ Answer: 1,440 Explanation: Use the halving and doubling strategy half of 90 to make the problem easier 90/ 2 = 45 Multiply 045 with 16 16*45 = 720 Double the 720 2*720= 1440 16*90 = 1,440 Estimate the product. Choose a method. Question 12. 81 × 38 Estimate: _____ Answer: 3,200 Explanation: Round to the nearest tens. 81 is almost 80; 38 is almost 40; 80 x 40 = 3.200 Question 13. 16 × $59 Estimate: $_____ Answer: $120 Explanation: Round to the nearest tens. 16 is close to 20; $59 is close to $60; Use the mental math to find the product of 20 x $60 2 x $6 = $12 20 x $60 = $120 Estimated product of 16 x $59 = $120 Question 14. 43 × 25 Estimate: _____ Answer: 1,000 Explanation: Round to the nearest tens. 43 is almost 40; 25 is close to 25; 40 x 25 = 1000 Estimated product of 43 x 25 = 1,000 Question 15. 76 × 45 Estimate: _____ Answer: 3,200 Explanation: Round to the nearest tens. 76 is close to 80; 45 is almost 40; Use mental mathematics 8 x 4 = 32 80 x 40 = 3200 So, the estimated product of 76 x 45 = 3,200 Question 16. 65 × $79 Estimate: _____ Answer: $4,800 Explanation: Round to the nearest tens. 65 is almost 60; $79 is close to $80; Use the mental math 6 x $8 = $48 60 x $80 = $4800 So, estimated product of 65 x $79 = $4,800 Question 17. 92 × 38 Estimate: _____ Answer: 3,600 Explanation: Round to the nearest tens. 92 is close to 90; 38 is almost 40; Use the mental math, then 9 x 4 = 36 90 x 40 = 3.600 So, estimated product of 92 x 38 = 3,600 Question 18. 37 × 31 Estimate: _____ Answer: 1,200 Explanation: Round to the nearest tens. 37 is almost 40; 31 is almost 30; Use the mental math, then 4 x 3 = 12 40 x 30 = 1.200 So, estimated product of 37 x 31 = 1,200 Question 19. 26 × $59 Estimate: _____ Answer: $1,800 Explanation: Round to the nearest tens. 26 is almost 30; $59 is close to $60; Use the mental math, then 3 x $6 = $18 30 x $60 = $1,800 So, estimated product of 26 x $59 = $1,800 Question 20. 54 × 26 Estimate: _____ Answer: 18 centimeters Explanation: Round to the nearest tens. 54 is almost 50; 26 is almost 30; Use mental mathematics 5 x 3 = 15 50 x 30 = 1,500 So, estimated product of 54 x 26 = 1,500 Question 21. 52 × 87 Estimate: _____ Answer: 4,500 Explanation: Round to the nearest tens. is almost 50; 87 is close to 90; Use mental mathematics 5 x 9 = 45 50 x 90 = 4500 So, estimated product of 52 x 87 = 4,500 Question 22. × × 39 Estimate: _____ Answer: 18 centimeters Explanation: Round to the nearest tens. 39 is almost 40; 27 is almost 30; Use mental mathematics 4 x 3 = 12 40 x 30 = 1,200 So, estimated product of 39 x 27 = 1,200 Question 23. 63 × 58 Estimate: _____ Answer: 3,600 Explanation: Round to the nearest tens. 63 is almost 60; 58 is almost 60; Use mental mathematics 6 x 6 = 36 60 x 60 = 3.600 So, estimated product of 63 x 58 = 3,600 Page no. 170 Question 24. Mrs. Traynor's class is going to the zoo. The trip costs $26 for each student. There are 22 students in her class. What is a good estimate for the cost of the students' excursion? Type below: _____________ Answer: 18 inches Explanation: According to the data given, Ms. Traynor's class is taking an excursion to the zoo Cost of travel for each student = $26 Total number of students in her class = 22 The total cost of travel for students = $26 x 22 Round to the nearest tens. 26 is almost 30; 22 is close to 20; Use the mental math $3 x 2 = $6 $30 x 20 = $600 Dan, the total estimated cost for the trip for students = $600 Question 25. Tito wrote the following on the board. What's the unknown number? ______ Answer: 400 Explanation: An unknown number is 50 x 8 = 400 Question 26. What are the partial products resulting from multiplication of 15 × 32? Type below: _________ Answer: Partial products are 300, 150, 20, 10 Explanation: Partial products are 300, 150, 20, 10 Question 27. A city bus company sold 39 single tickets and 20 return tickets from West Elmwood to East Elmwood. Single tickets cost $14. Round-trip tickets cost $25. How much money did the bus company raise? $ ______ Answer: $1,046 Explanation: According to the data given, Number of one - road tickets sold by the city bus company = 39 Return tickets from west Elmwood to east Elmwood = 20 Cost of one - road tickets = $14 Dan, cost of 39 one - way tickets = 39 x $14 =$546 Cost of return tickets = $25 Dan, cost of 20 return tickets = $25 x 20 = $500 Total money collected by the city bus company = $546 + $500 = $1,046 Page No. 173 Question 1. Look at the problem. Complete the sentences. Multiply ____ and ____ to get 0. Multiply ____ and ____ to get 1,620. Add the partial products. 0 + 1,620 = ____ _____ Answer: Multiply 27 and 0 to get 0. Multiply 27 and 6 to 1,620. Add the partial products. 0 + 1.620 = 1.620. Estimate. Then find the product. Question 2. 6 8 × 5 3 ——- Estimate: ________ Product: _________ Answer: Estimate: 3,500 Product: 3,604 Explanation: 68 is closer to 70 and 53 is closer to 50 Estimate: 70 x 50 = 3,500 60 x 53 = 3180 8 x 53 = 424 3180 + 424 = 3604 Product 3,604 Question 3. 6 1 × 5 4 ——- Estimate: ________ Product: _________ Estimate: 3,000 Product: 3,294 Explanation: 61 is closer to 60 and 54 is closer to 50 Estimate: 60 x 50 = 3,000 60 x 54 = 3240 1 x 54 = 54 3240 3240 54 = 3294 Product 3.294 Question 4. 9 0 × 2 7 ——- Estimate: ________ Product: ________ Answer: Estimate: 2,700 Product: 2,4 000 30 Explanation: 27 is closer to 30 Estimate: 90 x 30 = 2,700 90 x 27 = 2430 Product 2,430 Question 5. 3 0 × 4 7 ——- Estimate: ________ Product: ________ Answer: Estimate: 1,500 Product: 1,4 00 10 Explanation: 47 is closer to 50 Estimate: 30 x 50 = 1,500 30 x 47 = 1410 Product 1,410 Question 6. 7 8 × 5 6 ——- Estimate: ________ Product: _________ Answer: Estimate: 4,800 Product: 4,368 Explanation: 78 is closer to 80 and 56 is closer up to 60 Estimate: 80 x 60 = 4,800 70 x 56 = 3920 8 x 56 = 448 3920 + 448 = 4368 Product 4,368 Question 7. 2 7 × 2 5 —— Estimate: ________ Product: _________ Answer: Estimate: 600 Product: 675 Explanation: 27 is closer to 30 and 25 is closer at 20 Estimate: 30 x 20 = 600 20 x 25 = 500 7 x 25 = 175 500 + 175 = 675 Product 675 Practice: Copy and Solve Estimate. Then find the product. Question 8. 34 × 65 Estimate: _________ Product: ____________ Answer: Estimate: 1,800 Product: 2,210 Explanation: 34 is closer to 30 and 65 is closer to 30 and 65 is closer to 30 65 Estimate: 30 x 60 = 1,800 30 x 65 = 1950 4 x 65 = 260 1950 + 260 = 2210 Product 2,210 Question 9. 42 × $13 Estimate: $ ________ Product: $_______ Answer: Estimate: $400 Product: $546 Explanation: 42 is closer to 40 and 13 is closer to 4 1 00 Estimate: 40 x 10 = 400 40 x $13 = $520 2 x $13= $26 $520 + $26 = $546 Product $546 Question 10. 60 × 17 Estimate: ________ Product: ___________ Answer: Estimate: 1,200 Product: 1,020 Explanation: 17 is closer to 20 Estimate: 60 x 20 = 1,200 60 x 17 = 1020 Product = 1,020 Question 111. 62 × 45 Estimate: _________ Product: __________ Answer: Estimate: 2,400 Product: 2,790 Explanation: 62 is closer to 60 and 45 is closer to 2,400 Product: 2,790 Explanation: 62 is closer to 60 and 45 is closer to 60 Estimate: 60 x 40 = 2.400 60 x 45 = 2700 2 x 45= 90 2700 + 90 = 2790 Product 2.790 Question 12. 57 × $98 Estimate: $ ________ Product: $_______ Answer: Estimate: 6,000 Product: 5,586 Explanation: 57 is closer to 60 and 98 is closer to 100 Estimate: 5,586 60 x 100 = 6,000 50 x 98 = 4900 7 x 98= 686 4900 + 686 = 5586 Product 5,586 Search for a Pattern Algebra Write a line for the pattern. Use your rule to find the unknown numbers. Question 13. Rule ____ 5 hours = 5 x 60 = 300 min 10hr = 10 x 60 = 600 min 15 hours = 15 x 60 = 900 min 20hr = 20 x 60 = 1200 min 25 hours = 25 x 60 = 1500 min 14. Owners of a summer camp buy new cots for their cabins. There are 16 cabins. Each cabin needs 6 cots. Each cot costs $92. How much will the new cots cost? $ _______ Answer: $8,832 Explanation: According to the data given, Owners pf a summer camp buy new cots for their cabins Number of cabins 16 Each cabin needs 6 cots Dan, total cot = 16 x 6 = 96 Each cot cost = $92 Dan, cost for totalts = $92 x 96 92 is closer to 90 and is closer to 100 Estimate = 90 x 100 = 9,000 90 x 96 = 8640 2 x 96 = 192 8640 + 192 = 8832 Product = 8,832 Question 15. A theatre has 28 rows of 38 seats downstairs and 14 rows of 26 seats above. How many seats does the theater have? ______ seats Answer: 1,428 seats Explanation: According to the data given, A theater has 28 rows of 38 seats downstairs = 28 x 38 = 1064 14 rows of 26 seats above = 14 x 26 = 364 Total seats = 1064 + 364 = 1,428 seats Page no. Machine A can label 11 bottles in 1 minute. Machine B can label 12 bottles in 1 minute. How many bottles can both machines label in 15 minutes? A. What do you need to know? Type below: _________ Answer: Number of bottles labeled by Machine A and Machine B in 15 minutes Question 16. B. What numbers do you use? Type below: _________ Answer: 15x 11 and 15 x 12 Question 16. c. Tell us why you use more than one operation to fix the problem. Type below: _________ Answer: To find out the total number of bottles from both machines A&B Question 16. d. Solve the problem. So, both machines can label ____ bottles in ____ minutes. Type below: ____________ Answer: Machine A can label 11 bottles in 1 minute Then, the number of bottles labeled by machine A in 15 minutes = 15 x 11 = 165 Machine B can 12 bottles in 1 20 minutes Then the number of bottles labeled by machine B in 15 minutes = 15 x 12 = 180 Total bottles labelled by both machines in 15 minutes = 165 + 180 = 345 Question 17. Make sense of trouble A toy company makes wooden blocks. A box contains 85 blocks. How many blocks can 19 boxes contain? ______ blocks Answer: 1,615 blocks Explanation: From the data given, A toy company makes wooden blocks A box holds 85 blocks Then, number of blocks to hold by 19 boxes = 19 x 85 = 1615 Total number of blocks owned by 19 boxes = 1,615 Question 18. A company packs boxes of candles. Each box can contain 75 candles. So far, 50 boxes have been packed, but only 30 boxes have been loaded onto a truck. How many candles are left to load on the truck? ______ Candles Answer: 1,500 Candles Explanation: According to the given data, A company is packing boxes of candles Each box can hold 75 candles Then, number candles to hold by 50 boxes = 50 x 75 = 3750 Number of candles to hold by 30 boxes = 30 x 75 = 2250 50 boxes are packed, but only 30 boxes are loaded on a truck Remaining candles are left to truck = 3750 – 2250 = 1,500 Question 19. Mr. Garcia's class raised money for an excursion to the zoo. There are 23 students in his class. The cost of the trip will be $17 for each student. What are the costs for all students? Explain how you found your answer. $ ______ Answer: Explanation: According to the data given, Mr Garcia's class raised money for an excursion to the zoo Total number of students in his class = 23 students Cost the for each student = $17 Dan, total cost for all students = $17 x 23 = $391 Common Core - Page number 175 Multiply by RegroupIng Estimate. Then find the product. Question 1. Estimate: 2,700 Think: 87 is close to 90 and 32 is close to 30. 90 × 30 = 2,700 Answer: 2,784 Explanation: Think: 87 is close to 90 and 32 is close to 30. 90 × 30 = 2,700

Question 2. 7 3 × 2 8 ——— Estimate: ______ Product: _______ Answer: Estimate: 2,100 Product: 2,044 Explanation: Estimate: 73 is close to 70; 28 is almost 30. So, 70 x 30 = 2,100. Product: Write 73 as 7 tens and 3. Multiply 28 by 3. 2 28 x 73 —— 84 <– 3 x 28 Multiply 28 by 7 tens 5 28 x 73 ——— 1960 <– 70 x 28 Add the partial products. 84 + 1960 = 2.044. So, 73 x 28 = 2,044. Question 3. 4 8 × 3 8 ——— Estimate: ______ Product: _______ Answer: Estimate: 2,000 Product: 1,824 Explanation: 48 is close to 50 and 38 is close to 40. Estimate: 50 × 40 = 2,000 40 x 38 = 1520 8 x 38 = 304 1520 + 304 = 1824. Product: 1,824 Question 4. 5 9 × 5 2 ——— Estimate: ______ Product: ______ Answer: Estimate: 3,000 Product: 3,068 Explanation: 59 is close to 60 and 52 is close to 50. Estimate: 60 × 50 = 3,000 50 x 52 = 2600 9 x 52 = 468 2600 + 468 = 3068. Product: 3,068. Question 5. 8 4 × 4 0 ——— Estimate: ______ Product: ______ Answer: Estimate: 3,200 Product: 3,360 Explanation: 84 is close to 80 and 40 is close to 40. Estimate: 80 × 40 = 3,200 80 x 40 = 3,200 4 x 40 = 160 3200 + 160 = 3,360. Product: 3,360. Question 6. 8 3 × 7 ——— Estimate: ______ Product: _______ Answer: Estimate: 6,400 Product: 6,391 Explanation: 83 is close to 80 and 77 is close to 80. Estimate: 80 × 80 = 6,400 80 x 77 = 6,160 3 x 77 = 231 6,160 + 231 = 6,391. Product: 6,391. Question 7. 9 1 × 1 9 ——— Estimate: ______ Product: _______ Answer: Estimate: 1,800 Product: 1,729 Explanation: 91 is close to 90 and 19 is close to 20. Estimate: 90 × 20 = 1,800 90 x 19 = 1,710 1 x 19 = 19 1910+ 19 = 1,729. Product: 1,729. Problem-solving question 8. Baseballs come in boxes of 84 baseballs. A team orders 18 boxes of baseballs. How many baseballs does the team order? _______ baseballs Answer: 1,512 baseballs Explanation: To find total baseball, 84 x 18 80 x 18 = 1,440 4 x 18 = 72 84 x 18 = 1,512 Question 9. There are 16 tables in the school's lunchroom. Each table can accommodate 22 students. How many students can sit at lunch at once? _______ students Answer: 352 students Explanation: Total Students = 16 x 22 10 x 22 = 220 6 x 22 = 132 220 + 132 = 352. 352 students can sit at lunch at once Common Core - Page number 176 Les Check Question 1. The art teacher has 48 boxes of crayons. There are 64 crayons in each box. What is the best estimate of the number of crayons the art teacher has? Options: a. 2,400 b. 2,800 c. 3,000 d. 3,500 Answer: c. 3,000 Explanation: 1. Total of crayons = 48 x 64 48 is almost 50; 64 is almost 60 50 x 60 = 3.000. The art teacher has about 3,000 crayons. Question 2. A basketball team scored an average of 52 points in each of the 15 games. How many points did the team score in total? Options: a. 500 b. 312 c. 780 d. 1,000 Answer: c. 780 Explanation: Total points = 52 x 15 50 x 15 = 750 2 x 15 = 30 750 + 30 = 780. The basketball team scored a total of 780 points. Spiral overview Question 3. On a Saturday, an orchard sold 83 bags of apples. There are 27 apples in each bag. What expression represents the total number of apples sold? Options: a. 16 + 6 + 56 + 21 b. 160 + 60 + 56 + 21 c. 160 + 60 + 560 + 21 d. 1,600 + 60 + 560 + 21 Answer: d. 1,600 + 60 + 560 + 21 Explanation: Total number of apples sold = 83 x 27 80 x 27 = 2,160 3 x 27 = 81 2,160 + 81 = 2,241. The total number of apples sold = 2,241. 16 + 6 + 56 + 21 = 99 not equal to 2,241 160 + 60 + 56 + 21 = 297 not equal to 2,241 160 + 60 + 560 + 21 = 80 160 1 not equal to 2,241 1,600 + 60 + 560 + 21 = 2,241 equal to 2,241 1,600 + 60 + 560 + 21 = 2,241 is correct. Question 4. Hannah has a grid of squares that has 12 rows with 15 squares in each row. She turns 5 rows of 8 squares in the middle of the grid blue. She turns the rest of the squares red. How many squares does Hannah turn red? Options: a. 40 b. 140 c. 180 d. 220 Answer: b. 140 Explanation: Hannah has a grid of squares with 12 rows with 15 squares in each row = 12 x 15 = 180. The grid of squares in blue = 5 x 8 = 40. The grid of squares in red = 180 – 40 = 140. Question 5. Gabriella has 4 times as many erasing a Leona. Leona has 8 erasers. How many erasers does Gabriella have? Options: a. 32 b. 24 c. 12 d. 2 Answer: a. 32 Explanation: Gabriella has 4 x 8 = 32 eraserms. Question 6. Phil has three times as many rocks as Peter. Together they have 48 rocks. How many more stones does Phil have than Peter? Options: a. 36 b. 24 c. 16 d. 12 Answer: b. 24 Explanation: Phil has 3 times as many rocks as Peter. Together they have 48 rocks If Peter has x rocks, Phil has 3x rocks 3x + x = 48. 4x = 48. x = 48/4 = 12. Peter has 12 stone. Phil has 3 x 12 = 36 rocks. Phil has 36 – 12 = 24 more rocks than Peter. Page 179 Question 1. Find the product. Estimate: ______ Product: _______ Answer: Estimate: 1,500 Product: 1,566 Explanation: 54 x 29 Estimate: Think 54 is close to 50; 29 is almost 30. 50 x 30 = 1,500 Product: 20 x 5 tens = 100 tens 20 x 4 ones = 80 ones 9 x 5 tens = 45 tens 9 x 4 ones = 36 ones. Add partial products. 1000 + 80 + 450 + 36 = 1,566. Estimate. Then choose a method to find the product. Question 2. 3 6 × 1 4 ——- Estimate: ______ Product: ______ Answer: Estimate: 400 Product: 504 Explanation: 36 x 14 Estimate: Think 36 is close to 40; 14 is almost 10. 40 x 10 = Product: 10 x 3 tens = 30 tens 10 x 6 ones = 60 ones 4 x 3 tens = 12 tens 4 x 6 ones = 24 ones. Add Add Products. 300 + 60 + 120 + 24 = 504. Question 3. 6 3 × 4 2 ——- Estimate: ______ Product: ______ Answer: Estimate: 2,400 Product: 2646 Explanation: 63 x 42 Estimate: Think 63 is close to 60; 42 is almost 40. 60 x 40 = 2400 Product: 40 x 6 tens = 240 tens 40 x 3 ones = 120 ones 2 x 6 tens = 12 tens 2 x 3 ones = 6 ones. Add partial products. 2400 + 120 + 120 + 6 = 2646. Question 4. 8 4 × 5 3 ——- Estimate: ______ Product: ______ Answer: Estimate: 4,000 Product: 4,452 Explanation: 84 x 53 Estimate: Think 84 is close to 80; 53 is almost 50. 80 x 50 = 4,000 Product: 50 x 8 tens = 400 tens 50 x 4 ones = 200 ones 3 x 8 tens = 24 tens 3 x 4 ones = 12 ones. Add partial products. 4000 + 200 + 240 + 12 = 4.452. Question 5. 7 1 × 1 3 ——- Estimate: ______ Product: ______ Answer: Estimate: 700 Product: 923 Explanation: 71 x 13 Estimate: Think 71 is close to 70; 13 is almost 10. 70 x 10 = 700 Product: 10 x 7 tens = 70 tens 10 x 1 ones = 10 ones 3 x 7 tens = 21 tens 3 x 1 ones = 3 ones. Add partial products. 700 + 10 + 210 + 3 = 923. Practice: Copy and fix estimate. Find the product. Question 6. 29 × $82 Estimate: $ ______ Product: $_____ Answer: Estimate: $2,400 Product: $2,378 Explanation: 29 x $82 Estimate: Think 29 is close to 30; $82 is almost $80. 30 x $80 = $2,400 Product: $80 x 2 tens = $160 tens $80 x 9 ones = $720 ones $2 x 2 tens = $4 tens $2 x 9 ones = $18 ones ones. Add partial products. $1600 + $720 + $40 + $18 = $2,378. Question 7. 57 × 79 Estimate: _______ Product: _______ Answer: Estimate: 4,800 Product: 4,503 Explanation: 57 x 79 Estimate: Think 57 is close to 60; 79 is close to 80. 60 x 80 = 4,800 Product: 70 x 5 tens = 350 tens 70 x 7 ones = 490 ones 9 x 5 tens = 45 tens 9 x 7 ones = 63 ones. Add partial products. 3500 + 490 + 450 + 63 = 4.503. Question 8. 80 × 27 Estimate: _______ Product: _______ Answer: Estimate: 2,400 Product: 2,160 Explanation: 80 x 27 Estimate: Think 27 is close to 30. 30 x 80 = 2,400 Product: 20 x 8 tens = 160 tens 20 x 0 ones = 0 ones 7 x 8 tens = 56 tens 7 x 0 ones = 0 ones. Add partial products. 1600 + 0 + 560 + 0 = 2.160. Question 9. 32 × $75 Estimate: $ ______ Product: $_____ Answer: Estimate: $2,100 Product: $2,400 Explanation: 32 × $75 Estimate: Think 32 is close to 30; $75 is almost $70. 30 x $70 = $2,100 Product: $70 x 3 tens = $210 tens $70 x 2 ones = $140 ones $5 x 3 tens = $15 tens $5 x 2 ones = $10 ones ones. Add partial products. $2100 + $140 + $150 + $10 = $2,400. Question 10. 55 × 48 Estimate: _______ Product: _______ Answer: Estimate: 2,750 Product: 2,640 Explanation: 55 × 48 Estimate: Think 48 is close to 50. 55 x 50 = 2,750 Product: 40 x 5 tens = 200 tens 40 x 5 ones = 200 ones 8 x 5 tens = 40 tens 8 x 5 ones = 40 ones. Add partial to do so. 2000 + 200 + 400 + 40 = 2.640. Question 11. 19 × $82 Estimate: $ ______ Product: $_____ Answer: Estimate: $1,600 Product: Product: Product: Statement: 19 × $82 Estimate: Think 19 is close to 20; $82 is almost $80. 20 x $80 = $1,600 Product: $80 x 1 tens = $80 tens $80 x 9 ones = $720 ones $2 x 1 tens = $2 tens $2 x 9 ones = $18 ones ones. Add partial products. $800 + $720 + $20 + $18 = $1,558. Question 12. 25 × $25 Estimate: $ ______ Product: $_____ Answer: Estimate: $625 Product: $625 Explainer: 25 × $25 Estimate: 25 x $2 2 2 25 = $625 Product: $20 x 2 tens = $40 tens $20 x 5 ones = $100 ones $5 x 2 tens = $10 tens $5 x 5 ones = $25 ones ones. Add partial products. $400 + $100 + $100 + $25 = $625. Question 13. 41 × 98 Estimate: _______ Product: _______ Answer: Estimate: 4,000 Product: 4,018 Explanation: 41 × 98 Estimate: Think 41 is close to 40; 98 is almost 100. 40 x 100 = 4,000 Product: 90 x 4 tens = 360 tens 90 x 1 ones = 90 ones 8 x 4 tens = 32 tens 8 x 1 ones = 8 ones. Add partial products. 3600 + 90 + 320 + 8 = 4.018. Identify Relationships Algebra Use mental mathematics to find the number. Question 14. 30 × 14 = 420, i.e. 30 × 15 = ______ Answer: 30 × 15 = 450 Explanation: 30 × 15 = 30 + 420 30 × 15 = 450 Question 15. 25 × 12 = 300, i.e. 25 × ______ = 350 Answer: 25 x 14 = 350 Explanation: 25 × 12 = 300 For each subsequent multiplication, the product value is increased by 25. 25 x 13 = 325. 25 x 14 =350. Question 16. The city conservation manager bought 16 maple trees for $26 each. She paid with five $100 bills. How much change does the manager get? Explain. $ ______ Answer: $84 Explanation: The city conservation manager bought 16 maple trees for $26 each = 16 x $26 = $416. She paid with five $100 bills = 5 x $100 = $500. The manager receives = $500 – $416 = $84. Question 17. Each of the 25 students in Group A read for 45 minutes. Each of the 21 students in Group B reads for 48 minutes. Which group reads for more minutes? Explain. ________ Answer: Group A read for more minutes than Group B. Explanation: Group A read for 25 x 45 = 1125 minutes. Group B read for 21 x 48 = 1008 minutes. Group A read longer than Group B. Page No. Martin collects stamps. He counted 48 pages in his compilation album. The first 20 pages each have 35 stamps in 5 rows. The rest of the pages each have 54 stamps. How many stamps does Martin have in his album? A. What do you need to know? Type below: _________ Answer: The total stamps in the first 20 pages + The total number of stamps on the remaining pages. Question 18. B. How are you going to multiply to find the number of stamps? Type below: ________ Answer: The first 20 pages each have 35 stamps in 5 rows. So, 35 x 5 = 175 stamps. Question 18. c. Tell us why you could use addition and subtraction to resolve the issue. Type below: _________ Answer: As stated that the number of stamps available in the first 20 and the number of stamps available in the rest of the pages. We need to add all the pages to get 48 pages of stamps. Question 18. 18. Show the steps to solve the problem. Type below: _________ Answer: Martin has 48 pages in his collector's album. The first 20 pages each have 35 stamps in 5 rows. So, 35 x 5 = 175 stamps. The first 20 pages have 175 stamps. The rest of the pages each have 54 stamps. So, total stamps = 175 + 54 = 229 stamps. Question 18. E. Complete the sentences. Martin has a total of _____ stamps on the first 20 pages. There are _____ more pages after the first 20 pages in Martin's album. There are _____ stamps on the rest of the pages. There are _____ stamps in the album. Type below: ________ Answer: Martin has a total of __175___ stamps on the first 20 pages. There are __24___ more pages after the first 20 pages in Martin's album. There are __54___ stamps on the rest of the pages. There are ___229__ stamps in the album. Question 19. Select the expressions with the same product as 35 × 17. Mark everything that applies. Options: a. (30 × 10) + (30 × 7) + (5 × 10) + (5 × 7) b. (30 × 17) + (5 × 17) c. (35 × 30) + (35 × 5) + (35 × 10) + (35 × 7) d. (35 × 10) + (35 × 7) e. (35 × 10) + (30 × 10) + (5 × 10) + (5 × 7) f. (35 × 30) + (35 × 5) Answer: a. (30 × 10) + (30 × 7) + (5 × 10) + (5 × 7) (30 × 17) + (5 × 17) d. (35 × 10) + (35 × 7) Explanation : 35 × 17 30 x 10 =300 30 x 7 = 210 5 x 10 = 50 5 x 7 = 35 300 + 210 + 50 + 35 = 595. a. (30 × 10) + (30 × 7) + (5 × 10) + (5 × 7) = 300 + 210 + 50 + 35 = 595 equal to 595. (b. (30 × 17) + (5 × 17) = 510 + 85 = 595 equal to 595. c. (35 × 30) + (35 × 5) + (35 × 10) + (35 × 7) = 1050 + 175 + 350 + 245 = 1820 not equal to 595. d. (35 × 10) + (35 × 7) = 350 + 245 = 595 equal to 595e. (35 × 10) + (30 × 10) + (5 × 10) + (5 × 7) = 350 + 300 + 50 + 35 = 735 not equal to 595. f. (35 × 30) + (35 × 5) = 1050 + 175 = 1,225 not equal to 595. Common Core – Page 181 Choose an estimate of the multiplication method. Then choose a method to find the product. Question 1. Estimate: 1,200 3 1 × 4 3 ——- 9 3 + 1, 2 4 0 ———— 1, 3 3 3 Answer: Estimate: 1,200 Product: 1, 3 3 3 Explanation: Estimate: 1,200 3 1 × 4 3 ——- 9 3 + 1, 2 4 0 ———— 1, 3 3 3 Question 2. 6 7 × 8 5 ——- Estimate: _____ Product: ______ Answer: Estimate: 6,300 Product: 5,695 Note: Estimate: 67 is close to 70; 85 is almost 90. 70 x 90 = 6,300. Product: 67 x 85 80 x 6 tens = 480 tens 80 x 7 ones = 560 ones 5 x 6 tens = 30 tens 5 x 7 ones = 35 ones. Add partial products. 4800 + 560 + 300 + 35 = 5.695. Question 3. 6 8 × 3 8 ——- Estimate: _____ Product: ______ Answer: Estimate: 2,800 Product: 2,584 Note: Estimate: 68 is close to 70; 38 is almost 40. 70 x 40 = 2,800. Product: 68 x 38 30 x 6 tens = 180 tens 30 x 8 ones = 240 ones 8 x 6 tens = 48 tens 8 x 8 ones = 64 ones. Add partial products. 1800 + 240 + 480 + 64 = 2.584. Question 4. 5 × 1 7 ——- Estimate: _____ Product: ______ ______ Estimate: 1,700 Product: 1,615 Explanation: Estimate: 95 is nearly 100. 100 x 17 = 1,700. Product: 95 x 17 10 x 9 tens = 90 tens 10 x 5 ones = 50 ones 7 x 9 tens = 63 tens 7 x 5 ones = 35 ones. Add partial products. 900 + 50 + 630 + 35 = 1.615. Question 5. 4 9 × 5 4 ——- Estimate: _____ Product: ______ Answer: Estimate: 2,500 Product: 2,646 Note: Estimate: 49 is close to 50; 54 is almost 50. 50 x 50 = 2,500. Product: 49 x 54 50 x 4 tens = 200 tens 50 x 9 ones = 450 ones 4 x 4 tens = 16 tens 4 x 9 ones = 36 ones. Add partial products. 2000 + 450 + 160 + 36 = 2.646. Question 6. 9 1 × 2 6 ——- Estimate: _____ Product: ______ Answer: Estimate: 2,700 Product: 2,366 Explanation: Estimate: 91 is close to 90; 26 is almost 30. 90 x 30 = 2,700. Product: 49 x 54 20 x 9 tens = 180 tens 20 x 1 ones = 20 ones 6 x 9 tens = 54 tens 6 x 1 ones = 6 ones. Add partial products. 1800 + 20 + 540 + 6 = 2.366. Question 7. 8 2 × 1 9 ——- Estimate: _____ Product: ______ Answer: Estimate: 1,600 Product: 1,558 Note: Estimate: 82 is close to 80; 19 is almost 20. 80 x 20 = 1,600. Product: 82 x 19 10 x 8 tens = 80 tens 10 x 2 ones = 20 ones 9 x 8 tens = 72 tens 9 x 2 ones = 18 ones. Add partial products. 800 + 20 + 720 + 18 = 1.558. Question 8. 4 6 × 2 7 ——- Estimate: _____ Product: ______ Answer: Estimate: 1,500 Product: 1,242 Note: Estimate: 46 is close to 50; 27 is almost 30. 50 x 30 = 1,500. Product: 46 x 27 20 x 4 tens = 80 tens 20 x 6 ones = 120 ones 7 x 4 tens = 28 tens 7 x 6 ones = 42 ones. Add partial products. 800 + 120 + 280 + 42 = 1,242. Question 9. 4 1 × 3 3 ——- Estimate: _____ Product: ______ Answer: Estimate: 1,200 Product: 1,353 Note: Estimate: 41 is almost 40; 33 is almost 30. 40 x 30 = 1,200. Product: 41 x 33 30 x 4 tens = 120 tens 30 x 1 ones = 30 ones 3 x 4 tens = 12 tens 3 x 1 ones = 3 ones. Add partial products. 1200 + 30 + 120 + 3 = 1.353. Question 10. 9 7 × 1 3 ——- Estimate: _____ Product: ______ Answer: Estimate: 1,300 Product: 1,261 Explanation: Estimate: 97 is close to 100. 100 x 13 = 1,300. Product: 97 x 13 10 x 9 tens = 90 tens 10 x 7 ones = 70 ones 3 x 9 tens = 27 tens 3 x 7 ones = 21 ones. Add partial products. 900 + 70 + 270 + 21 = 1.261. Question 11. 7 5 × 6 9 ——- Estimate: _____ Product: ______ Answer: Estimate: 5,600 Product: 5,195 Note: Estimate: 75 is close to 80; 69 is almost 70. 80 x 70 = 5,600. Product: 75 x 69 60 x 7 tens = 420 tens 60 x 5 ones = 300 ones 9 x 7 tens = 63 tens 9 x 5 ones = 45 ones. Add partial products. 4200 + 300 + 630 + 45 = 5.195. Problem-solving question 12. A cinema has 26 rows of seats. There are 18 seats in each row. How many places are there in total? ______ seats Answer: 468 seats Explanation: 26 x 18 = 468 seats. 20 x 18 = 360 6 x 18 = 108 108+360 = 468. Question 13. lesson at Briarwood Elementary collected at least 54 54 food during the food drive. If there were 29 classes in the school, what was the least number of cans collected? ______ cans Answer: 1,566 cans Explanation: Each lesson at Briarwood Elementary collected at least 54 cans of food. If there are 29 classes in the school, the least number of cans is collected = 54 x 29 = 1,566 cans. Common Core – Page 182 Les Check Question 1. A choir needs new robes for each of its 46 singers. Each robe costs $32. What are the total costs for all 46 robes? Options: a. $1,472 b. $1,372 c. $1,362 d. $230 Answer: a. $1,472 Explanation: 46 x $32 40 x $32 = $1,280 6 x $32 = $192 $1,280 + $192 = $1,472 Question 2. A wall on the side of a building consists of 52 rows of bricks with 44 stones in each row. How many stones make up the wall? Options: a. 3,080 b. 2,288 c. 488 d. 416 Answer: b. 2,288 Explanation: 52 x 44 50 x 44 = 2,200 2 x 44 = 88 2,200 + 88 = 2,288. 2,288 stones form the wall. Spiral overview Question 3. What expression shows how to multiply 4 × 362 using place value and extended shape? Options: a. (4 × 3) + (4 × 6) + (4 × 2) b. (4 × 300) + (4 × 600) +(4 × 200) c. (4 × 300) + (4 × 60) + (4 × 20) d. (4 × 300) + (4 × 60) + (4 × 2) Answer: d. (4 300) + (4 × 60) + (4 × 2) 4 × 300) + (4 × 60) + (4 × 2) Explanation: 4 × 300) + (4 × 60) + (4 × 2) Explanation: 4 × 300) + (4 × 60) + (4 × 2) Explanation: 4 × 300) + (4 × 60) + (4 × 2) Explanation: 4 × × 300) + (4 × 60) + (4 × 2) : 4 × 300) + (4362 = 1,448 a. (4 × 3) + (4 × 6) + (4 × 2) = 12 + 24 + 8 = 44 not equal to 1,448.b. (4 × 300) + (4 × 600) +(4 × 200) = 1200 + 2400 + 800 = 4,400 not equal to 1,448.c. (4 × 300) + (4 × 60) + (4 × 20) = 1200 + 240 + 80 = 1,520 not equal to 1,448. d. (4 × 300) + (4 × 60) + (4 × 2) = 1200 + 240 + 8 = 1,448 equal to 1,448. Question 4. Use the model below. What is the product 4 x 492? Options: a. 16 + 36 + 8 = 60 b. 160 + 36 + 8 = 204 c. 160 + 360 + 8 = 528 d. 1,600 + 360 + 8 = 1,968 Answer: d. 1,600 + 360 + 8 = 1,968 Explanation: 1,600 + 360 + 8 = 1,968 Question 5. What is the sum 13,094 + 259,728? Options: a. 272,832 b. 272,822 c. 262.722 d. 262,712 Answer: c. 262.722 Explanation: 13,094 + 259.728 = 262,722 Question 6. During the 2008-2009 season, there were 801,372 people who attended home hockey games in Philadelphia. There were 609,907 people attending the home hockey games in Phoenix. How much bigger was the homecoming in Philadelphia than in Phoenix that season? Options: a. 101,475 b. 191,465 c. 201,465 d. 202,465 Answer: b. 191,465 Explanation: 801,372 – 609,907 = 191,465 visitors Philadelphia is 191,465 larger than in Phoenix season. Page 185 Question 1. In June, an average of 74 bird counts were submitted per day. In July, an average of 89 were handed in per day. How many reports have been submitted for both months? (Tip: There are 30 days in June and 31 days in July.) First, write problem for June. Type below: __________ Answer: Since an average of 74 bird count notifications were returned every day in June. For the Month of June, there are days = 30 x 74 = 2.220. Question 1. Then write the problem for July. Type below: __________ Answer: In July, an average of 89 bird count notifications were submitted in July. For the month of July there are 31 days = 31 x 89 = 2,759. Question 1. Finally, find and add the two products. ____ Type below: __________ Answer: Since an average of 74 bird count notifications were returned every day in June. For the Month of June, there are 30 days = 30 x 74 = 2,220. In July, an average of 89 bird counts were handed in per day. For the month of July there are 31 days = 31 x 89 = 2,759. Add two products to get the total number of reports submitted for both months. 2.220 + 2.759 = 4.979. Question 2. What if an average of 98 notifications per day were handed in for the month of June? How many reports have been submitted for June? Describe how your answer for June would be different. ______ reports Answer: 720 more reports Explanation: Given that an average of 98 reports were enabled in each day for the month of June. June has 30 days. Total notifications were submitted for June = 30 x 98 = 2, 940. From the above answer, 98 − 74 = 24. So there would be 30 × 24, or 720 more reports. Question 3. There are 48 crayons in a box. There are 12 boxes in a box. Mr. Johnson ordered six boxes of crayons for the school. How many crayons did he get? ______ crayons Answer: 3,456 crayons Explanation: There are 48 crayons in a box. There are 12 boxes in a box. So, 1 box = 48 x 12 = 576 crayons. When Mr. Johnson ordered 6 boxes of crayons for the school, 6 x 576 crayons = 3,456 crayons. He gets 3,456 crayons. Question 4. Make sense of trouble Each of the 5 birdwatchers reported seeing 15 roseate spooners in one day. If they each reported seeing the same number of roseate spooners over 14 days, how many would be reported? ______ roseate spooners Answer: 1,050 pinky spooners Explanation: Given that, 1 day ->5 birdwatchers reported 15 rose eater spooners = 5 x 15 = 75 roseate spooners. So, in 14 days -> 5 birdwatchers reported 75 x 14 = 1,050 roseate spooners. Page 186 Question 5. On each of Maggie's bird watching trips, she has seen at least 24 birds. If she has taken 4 of these trips every year for the past 16 years, at least how many birds has Maggie seen? at least ______ birds Answer: Maggie seen 1,536 birds Explanation: Given that, 1 trip -> Maggie seen 24 birds. For 1 year she goes for 4 bird watching trips. So, she has seen 4 x 24 = 96 birds for 1 year. For 16 years, 16 x 96 = 1,536 birds have seen Maggie. Question 6. Make Sense of Problems There are 12 inches in a foot. Orders in September Harris 32 foot ribbon for the Crafts Club. In January, she orders 9 meters less. How many inches of ribbon does Mrs. Harris order? Explain how you found your answer. ______ Answer: 660 There are 12 inches in a foot. In September, Ms. Harris ordered 32 feet of ribbon for the Crafts Club = 32 x 12 = 384. In January she orders 9 meters less = 32 – 9 = 23. So, in January, she orders 23 x 12 = 276. Ms. Harris ordered 276 + 384 = 660 centimeters ribbon in total. (or) 9 less than 32 is 23, so I added 23 + 32 = 55. Then I multiplied 55 × 12 = 660. Question 7. Lydia's having a party on Saturday. She decides to write a riddle on her invitations to describe her house number on Cypress Street. Use the clues to find Lydia's address. ______ Cypress Street Answer: 14827 Cypress Street Explanation: Given that dozens of digit is 5 less than 7 = 7 – 5 = 2. 2 is the dozens of figures. The figure of thousands is twice the figure in the tens place = 2 x 2 = 4. The hundreds of figures is the largest even number that is less than 10 i.e., 8. The digit is the product of 7 and 1 = 7 x 1 = 7. The 10,000 digits are the difference between the hundreds of digits and the figures. So, 8 – 7 = 1. Add the products to get the final answer = 14827. Lydia's address (house number) is 14827 Cypress Street. Question 8. A school adds 4 rows of seats to the auditorium. There are 7 seats in each row. Each new chair costs $99. What are the total costs for the new seats? Show me your work. $ ______ Answer: $2,772 Explanation: Given that a school is adding 4 rows of seats to the auditorium. There are 7 seats in each row. So, 7 x 4 = 28 seats are available in an auditorium. Each new chair costs $99. 28 x $99 = $2,772 for total cost of the new seats. Common Core - Page 187 Problem Solving Multiply 2 – Numbers Solve any problem. Use a bar model to help. Question 1. Mason counted an average of 18 birds on his bird feeder every day for 20 days. Gloria counted an average of 21 birds on her bird feeder every day for 16 days. How many birds did Mason count at his feeder than Gloria counted with her? Birds counted by Mason: 18 × 20 = 360 Birds counted by Gloria: 21 × 16 = 336 Mark a bar model compare. Subtract. 360 – 336 = 24 So, Mason counted 24 more birds. Answer: Birds counted by Mason: 18 × 20 = 360 Birds counted by Gloria: 21 × 16 = 336 Mark a bar model compare. Subtract. 360 – 336 = 24 So, Mason counted 24 more birds. Question 2. The 24 students in Ms. Lee's class each collected an average of 18 cans for recycling. The 21 students in Mr. Galvez's class each collected an average of 25 cans for recycling. How many more cans have been collected by Mr. Galvez's class than Ms. Lee's class? ______ more cans Answer: The number of cans collected by ms. Lee's class = 18 x 24 = 432. The number of cans collected by Mr. Galvez's class = 25 x 21 = 525. Subtract bar model. 525 – 432 = 93 more cans. Galvez's class collected 93 more cans than Ms. Lee's class. Question 3. At east school, each of the 45 classrooms has an average of 22 22 At West School, each of the 42 classrooms has an average of 23 students. How many more students are left at East School than at West School? ______ more students Answer: Students in Eastern school = 45 x 22 = 990. Students in West School = 42 x 23 = 966. Use Subtracting Bar Model. 990 – 966 = 24. East School has 24 more students than West School. Question 4. A zoo gift shop orders 18 boxes of 75 key rings each and 15 boxes of 80 refrigerator magnets each. How many more key rings have than fridge magnets ordered by the gift shop? ______ more key chains Answer: Number of key rings = 75 x 18 = 1,350. Number of refrigerator magnets= 80 x 15 = 1,200. Use Subtracting Bar Model. 1.350 – 1,200 = 150. So, key chains are 150 more than fridge magnets. Common Core – Page 188 Les Check Question 1. Ace Manufacturing ordered 17 boxes with 85 ball bearings each. They also ordered 15 boxes with 90 feathers each. How many ball bearings than feathers did they order? Options: a. 5 b. 85 c. 90 d. 95 Answer: d. 95 Explanation: Number of ball bearings = 85 x 17 = 1.445. Number of feathers = 90 x 15 = 1,350. Use Subtracting Bar Model. 1.445 – 1.350 = 95. So, ball bearings are 95 more than feathers. Question 2. Elton hiked 16 miles a day on a 12-day walking tour. Lola hiked 14 miles a day on her 16-day walking tour. In total, how many more miles did Lola hike than Elton hiked? Options: a. 2 miles b. 18 miles c. 32 miles d. 118 miles Answer: c. 32 miles Explanation: Walking tour by Elton = 12 x 16 = 192. Walking tour of Lola = 16 x 14 = 224. Use Subtracting Bar Model. 224 – 192 = 32. So, Lola's walking tour is 32 times more than Elton's walking tour. Spiral overview Question 3. An orchard has 24 rows of apple trees. There are 35 apple trees in each row. How many apple trees are there in the orchard? Options: a. 59 b. 192 c. 740 d. 840 Answer: d. 840 Explanation: An orchard has 24 rows of apple trees. There are 35 apple trees in each row. 24 x 35 = 840 apple trees are in the orchard. Question 4. An amusement park reported 354,605 visitors last summer. What is this number rounded to the nearest thousand? Options: a. 354,600 b. 355,000 c. 360,000 d. 400,000 Answer: b. 355,000 Explanation: An amusement park reported 354,605 visitors last summer. 4,605 is close to 5,000. The answer is 355,000. Question 5. Attendance at the football match was 102,653. What is the value of the number 6? Options: a. 6 b. 60 c. 600 d. 6,000 Answer: c. 600 Explanation: Grade 6 is in hundreds of positions. So, the answer is 6 x 100 = 600. Question 6. Jill's fish weighs 8 times as much as her parakeet. Together, the pets weigh 63 grams. How much does the fish weigh? Options: a. 7 ounces b. 49 ounces c. 55 ounces d. 56 ounces Answer: d. 56 grams Explanation: Let Jill's parakeet = X. Jill's fish weighs 8 times as much as her parakeet = 8X. Together, the pets weigh 63 X + 8X = = 9X = 63. X = 63/9 = 7. Jill's parakeet =7. Jill's fish = 7 x 8 = 56 ounces. Review/Test – Page 189 Question 1. Explain how to find 40 × 50 using mental math Type below: ________ Answer: 200 Explanation: 40 x 50 By using mental mathematics 4 x 5 = 20 40 x 50 = 200 Ms. Traynor's class is taking an excursion to the zoo. The trip costs $26 for each student. There are 22 students in her class. Question 2. Part A Round each factor to estimate the total cost of the excursion of the students. $ ______ Answer: $600 Explanation: Total cost of student excursion = 22 x $26. 22 x $26 20 x $30 = $600 The total cost would be about $600. Question 2. Part B Use compatible numbers to estimate the total cost of the excursion. $ ______ Answer: $500 Explanation: If we use compatible numbers to estimate the total cost of the excursion. 22 x $26 20 × 25 = 500 The total cost would be about $500. Question 2. Part C Which do you think is the better estimate? Explain. Better estimate: ________ Answer: Using rounded numbers is a better estimate. When rounded numbers are used, one estimated factor was $4 more than the actual factor and the other estimated factor was $2, which is less than the actual factor. So, the estimate should be close to the actual one. When compatible numbers are used, both estimated factors were less than the actual factors. So, the product will be an underestimate. Review/Test – Page No Question 3. 3a 35 × 10 = 350 i. yes ii. no answer: i. yes Explanation: 35 x 10 = 350 30 x 10 = 300. 5 x 10 = 50. 300 + 50 = 350. Question 3. 3b. 19 × 20 = 380 i. yes ii. no answer: i. yes Explanation: 19 × 20 = 380 19 x 20 = 19 x 2 tens. 19 x 20 = 38 tens = 380. Question 3. 3c. 12 × 100 = 120 i. yes ii. no answer: ii. no explanation: 12 x 100 = 120. 10 x 100 = 1000 2 x 100 = 200. 1000 + 200 = 1200. Question 3. 3d. 70 × 100 = 7,000 i. yes ii. no answer: i. yes Explanation: 70 x 100 = 7,000 100 x 7 tens = 700 tens = 7,000 Question 3. 3rd. 28 × 30 = 2.100 i. yes ii. no answer: ii. no explanation: 28 × 30 20 x 30 = 600 8 x 30 = 240 600 + 240 = 840 Question 4. There are 23 boxes of pencils in Mr. Shaw's pantry. Each box contains 100 pencils. How many pencils are in the pantry? _____ pencils Answer: 2,300 pencils Explanation: 23 x 100 = 2,300 pencils are in the pantry. Question 5. What would be a reasonable estimate for each product? Write the estimate next to the product. An estimate can exceed 23 × 38 ________× × ×____×___ 25 x 40 31 x 32 –> 30 × 30 46 × 18 –> 50 × 20 39 × 21 –> 25 × 40 Explanation: 23 × 38; 23 is close to 25; 38 is almost 40. So, the estimated product is 25 x 40 31 x 32; 31 is almost 30; 32 is almost 30. So, the product is 30 × 30 46 × 18; 46 is almost 50; 18 is almost 20. The estimated product is therefore 50 × 20 39 × 21; 39 is almost 40; 21 is close to 25. The estimated product is therefore 25 × 40 question 6. There are 26 baseball teams in the league. Each team has 18 players. Write a number phrase that will provide a reasonable estimate for the number of players in the league. Explain how you found your estimate. Type below: ____________ Answer: There are 26 baseball teams in the league. Each team has 18 players. 26 x 18 25 x 20 We rounded each factor to its narrow factor, then simplified the multiplication. Question 7. The model shows 48 × 37. Write the partial products. Type below: __________ Answer: Partial products are 1200, 240, 280, 56 Review/Test – Page No. Jess made this model to find the product 32 × 17. Her models don't add up. Part A What did Jess do wrong? Type below: ____________ Answer: Jess added the numbers in the model instead of multiplying. Question 8. Part B Redraw the model so it's right. Type below: __________ Answer: Question 8. Part C What is the actual product 32 × 17? ______ Answer: 544 Explanation: 32 × 17 10 x 32 = 320 7 x 32 = 224 320 + 224 = 544. Question 9. Tatum wants to use sub-products to find 15 × 32. Write the numbers in the boxes to display 15 × 32. Type below: __________ Answer: Review/Test – Page 192 Question 10. What product is shown by the model? Write the letter of the product on the line below the model. Type below: ___________ Answer: C A B 10 + 3 = 13 10 + 3 = 13 13 x 13 2. 10 + 7 = 17 30 + 6 = 36 17 x 36 3. 20 + 4 = 24 10 + 4 = 14 24 x 14 Question 11. Mrs. Jones places 3 orders for school T-shirts. Each order has 16 boxes of shirts and each box contains 17 shirts. How many T-shirts does Mrs. Jones order? Use partial products to help you. Type below: __________ Answer: 816 T-shirts Explanation: Ms. Jones places 3 orders for school T-shirts. Each order has 16 boxes of shirts and each box contains 17 shirts. Each box has 17 shirts. 16 boxes = 16 x 17 = 272. Each order = 16 boxes = 272 shirts. 3 orders = 3 x 272 = 816 shirts. Mrs. Jones orders 816 T-shirts. Question 12. Write the unknown numbers. Use each digit exactly once. Type below: __________ Answer: 90 x 40 = 3,600 90 x 6 = 540 3 x 40 = 120 3 x 6 = 18. 3,600 + 540 + 120 + 8 = 4,278. Question 13. Mike has 16 baseball cards. Niko has 17 times as many baseball cards as Mike. How many baseball cards does Niko have? ________ baseball cards Answer: 272 baseball cards Explanation: Mike has 16 baseball cards. Niko has 17 times as many baseball cards as Mike. Niko has 16 x 17 = 272 baseball cards. Question 14. Multiply. 36 × 28 = _______ Answer: 1,008 Explanation: 36 x 28 20 x 30 = 20 x 6 = 120 8 x 30 = 240 8 x 6 = 48 600 + 120 + 240 + 48 = 1,008 Review/Test – Page No. A farmer planted 42 rows of tomatoes with 13 plants in each row. How many tomato plants did the farmer grow? 42 × 13 = ______ tomato plants Answer: 420 + 126 = 546 tomato plants Explanation: 42 × 13 10 x 42 = 420 3 x 42 = 126 420 + 126 = 546 tomato plants Question 16. Select another way to display 25 × 18. Mark everything that applies. Opties: a. (20 × 10) + (20 × 8) + (5 × 10) + (5 × 8) b. (25 × 20) + (25 × 5) + (25 × 10) + (25 × 8) c. (20 × 18) + (5 × 10) + (5 × 8) d. (25 × 10) + (25 × 8) e. (25 × 20) + (25 × 5) Antwoord: a. (20 × 10) + (20 × 8) + (5 × 10) + (5 × 8) c. (20 × 18) + (5 18) + (5 18) + (5 18) + (5 18) + (5 18) + (5 18) + (5 18) + (5 18) + (5 18) + (5 × 18) + (5 18) × 10) + (5 × 8) d. (25 × 10) + (25 × 8) Uitleg: 25 × 18 10 x 25 = 250 8 x 25 = 200 250 + 200 = 450. a. (20 × 10) + (20 × 8) + (5 × 10) + (5 × 8) = 200 + 160 + 50 + 40 = 450 b. (25 × 20) + (25 × 5) + (25 × 10) + (25 × 8) = 500 + 125 + 250 + 200 = 1,075 c. (20 × 18) + (5 × 10) + (5 × 8) = 360 + 50 + 40 = 450 d. (25 × 10) + (25 × 8) = 250 + 200 = 450 e. (25 × 20) + (25 × 5) = 500 + 125 = 625 Question 17. Terrell runs 15 sprints. Each sprint is 65 meters. How many feet does Terrell walk? Show me your work. ______ meters Answer: 975 meters Explanation: Terrell run 15 x 65 = 975 meters. Question 18. There are 3 new seats in each row in a school auditorium. There are 15 rows in the auditorium. Each new chair costs $74. What are the costs for the new seats? Explain how you found your answer. $ ______ Answer: $3,330 Explanation: Given that there are 3 new seats in each row in a school auditorium. There are 15 rows in the auditorium. Each new chair costs $74. So, 3 x 15 = 45 seats are available in an auditorium. Each new chair costs $74. 45 x $74 = $3,330 for total cost of the new seats. Question 19. Ray and Ella helped move their school library to a new building. Ray packed 27 boxes with 25 books in each box. Ella packed 23 boxes with 30 books in each box. How many more books did Ella pack? Show me your work. ______ books Answer: 15 books Explanation: Ray packed 27 x 25 = 675 books. Ella packed 23 x 30 = 690 books Ella packed 690 – 675 = 15 books more than Ray. Review/Test – Page 194 Question 20. Julius and Walt find the product of 25 and 16. Part A Julius' answer is wrong. What did Julius do wrong? Type below: ___________ Answer: Julius multiplied 25 by 10 and then multiplied 25 by 6 correctly. He added the two partial products incorrectly. Question 20. Part B What did Walt do wrong? Type below: ___________ Answer: Walt multiplied 6 by 5 and got 300 instead of 30 Question 20. Part C What is the right product? Type below: __________ 25 x 16 = 400 Question 21. A clothing store sells 26 shirts and 22 jeans. Each garment costs $32. Part A What is a reasonable estimate for the total cost of the clothing? Clothing? or explain how you found your answer. $ ______ Answer: $1500 Explanation: A clothing store sells 26 shirts and 22 jeans. 26 + 22 = 48 garments. Each garment costs $32. 48 x $32 50 x $30 = $1500 Question 21. Part B What is the exact answer for the total cost of the clothing? Let's see or explain how you found your answer. $ ______ Answer: $1,536 Explanation: 48 x $32 40 x $32 = $1,280 8 x $32 = $256 $1,280 + $256 = $1,536 Page No. A restaurant has 68 seats. There are six chairs at each table. About how many tables are there in the restaurant? Estimate. 68 ÷ 6 Think: What number of times 6 is about 68? 10 × 6 = ___ 11 × 6 = ___ 12 × 6 = ___ 68 is closest to _______ so the best estimate is _______ tables in the restaurant. Type below: _________ Answer: 68 is close to 70 and 6 is close to 5. So, 70/5 = 12. 10 × 6 = __60_ 11 × 6 = _66__ 12 × 6 = _72__ 68 is closest to ___66___,so the best estimate is about 11 x 6 = 66 tables in the restaurant. Find two numbers that contain the quotient. Then estimate the quotient. Question 2. 41 ÷ 3 between _______ and _______ Answer: between 13 and 14 approximately 14 Explanation: 13 x 3 = 39; 14 x 3 = 42. The quotient of 41 ÷ 3 shall be between 13 and 14. Question 3. 192 ÷ 5 between _______ and _______ Answer: between 30 and 40 approximately 40 Explanation: 30 x 5 = 150; 40 x 5 = 200. The quotient of 192 ÷ 5 shall be between 30 and 40. Find two numbers that contain the quotient. Then estimate the quotient. Question 4. 90 ÷ 7 between _______ and _______ Answer: between 12 and 13 about 13 Explanations: 12 x 7 = 84; 13 x 7 = 91. The quotient of 90 ÷ 7 is between 12 and 13. Question 5. 67 ÷ 4 between _______ and _______ Answer: between 16 and 17 on 17 Explanations: 16 x 4 = 64; 17 x 4 = 68. The quotient of 67 ÷ 4 shall be between 16 and 17. Question 6. 281 ÷ 9 between _______ and _______ Answer: between 30 and 40 approximately 30 Explanation: 30 x 9 = 270; 40 x 9 = 360. The quotient of 281 ÷ 9 is between 30 and 40. Question 7. 102 ÷ 7 between _______ and _______ Answer: between 14 and 15 approximately 15 Explanation: 14 x 7 = 98; 15 x 7 = 105. The quotient of 102 ÷ 7 is between 14 and 15. Question 8. 85 ÷ 6 between _______ and _______ Answer: between 14 and 15 about 14 Explanations: 14 x 6 = 84; 15 x 6 = 90. The quotient of 85 ÷ 6 is between 14 and 15. Question 9. 220 ÷ 8 between _______ and _______ Answer: between 20 and 30 about 30 Explanation: 20 x 8 = 160; 30 x 8 = 240. The quotient of 220 ÷ 8 is between 20 and 30. Determine whether the actual quotient is greater than or less than the given estimate. Write < or >. Question 10. 83 ÷ 8 _______ 10 Answer: > Explanation: 83 ÷ 8 = 10.375 > 10 Question 11. 155 ÷ 4 ______ 40 Answer: < Explanation: 155 ÷ 4 = 38.75 < 40 Question 12. 70 ÷ 6 _______ 11 Answer: > Explanation: 70 ÷ 6 = 11,666 > 11 Question 13. What's the question? A dolphin's heart beats 688 times Minutes. Answer: about 100 times. Type below: __________ Answer: How often does a dolphin's heart beat in 1 minute? Question 14. A mother tumbled ate about 278 pounds of food in a week. How much food did she eat in a day? about _____ pounds Answer: about 40 pounds Explanation: 278 ÷ 7 The quotient of 278 ÷ 7 is between 39 and 40. Question 15. Tanya has $42 to spend in the Dolphin Island store. T-shirts sell for $7 each and sunglasses retail for $6. Tanya buys 3 T-shirts. How many pairs of sunglasses can she buy with the amount of money she has left? _____ sunglasses Answer: 3 pairs of sunglasses Explanation: Considering that Tanya has $42 to spend in the Dolphin Island store. T-shirts sell for $7 each and sunglasses sell for $6. Tanya buys 3 T-shirts = 3 x $7 = $21. sunglasses = $42 – $21 = $21. 1 sunglasses sells for $6. So, $21 ÷ $7 = 3. 3 pairs of sunglasses Tanya can buy with the amount of money she has left behind. Page 200 Question 16. If a bottlenose dolphin can eat 175 pounds of fish, squid and shrimp in a week, about how many pounds of food does it eat in a day? Milo says the answer is about 20 pounds. Leah says the answer is about 30 pounds. Who's right? Explain. ________ Answer: The bottlenose dolphin can eat 25 pounds for 1 day. Both answers are correct. Because the 25 pounds is between 20 and 30 pounds. Explanation: 1 week = 7 days. The bottlenose dolphin can eat 175 pounds for 7 days. For 1 day = 175 ÷ 7 = 25 pounds. The bottlenose dolphin can eat 25 pounds for 1 day. Both answers are correct. Because the 25 pounds is between 20 and 30 pounds. Question 17. Four families went to lunch. The total food bill came to $167. The families also left a $30 tip for the waitress. If each family spent the same amount, how much did each family spend on dinner? Explain how you found your answer. $ ______ Answer: $98.5 Explanation: Four families went out for lunch. The total food bill came to $167. The families also left a $30 tip for the waitress. So, total amount = $167 + $30 = $197. If each family has spent the same amount = $197 ÷ 2 = $98.5 each family spent $98.5. Question 18. There are 6 screenings of a film about Van Gogh at the Kunstmuseum. A total of 459 people saw the film. The same number of people were at each show. About how many people were on each result? Circle the numbers between which the quotient is located. Then explain how you found your answer. 40 50 60 70 80 Type below: ________ Answer: 40 50 60 70 80 I found multiples of 6 that is 459 in between. 70 × 6 = 420 and 80 × 6 = 480. Since 459 is closer to 480, 459 ÷ 6 is about 80. Conclusion Check the links and solved problems for better math practice. Use Go Math Grade 4 Answer Key Chapter 3 Multiply 2-digit numbers to knowledge. Improve practical knowledge and solve skills with help HMH Go Math Grade 4 Answer Key. Be the first to grab the best approach by downloading Go Math HMH Answer Key. Key.