Prealgebra 2nd edition Marecek Solutions Manual

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INSTRUCTOR ANSWER GUIDE

Prealgebra 2e



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Prealgebra
1: Whole Numbers
1.1 Introduction to Whole Numbers

Practice Makes Perfect

Identify Counting Numbers and Whole Numbers In the following exercises, determine which of the following numbers are (a) counting numbers (b) whole numbers

1. $0, \frac{2}{3}, 5, 8.1, 125$

Answer: (a) 5, 125 (b) 0, 5, 125

2. $0, \frac{7}{10}, 3, 20.5, 300$

Answer: (a) 3, 300 (b) 0, 3, 300

3. $0, \frac{4}{9}, 3.9, 50, 221$

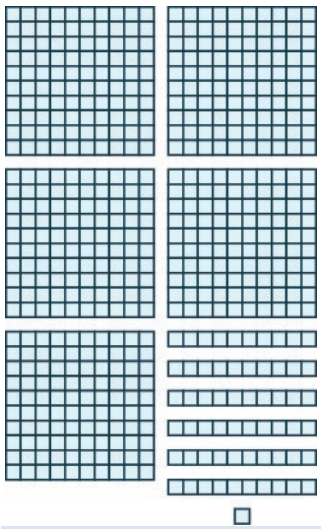
Answer: (a) 50, 221 (b) 0, 50, 221

4. $0, \frac{3}{5}, 10, 303, 422.6$

Answer: (a) 10, 303 (b) 0, 10, 303

Model Whole Numbers In the following exercises, use place value notation to find the value of the number modeled by the base-10 blocks.

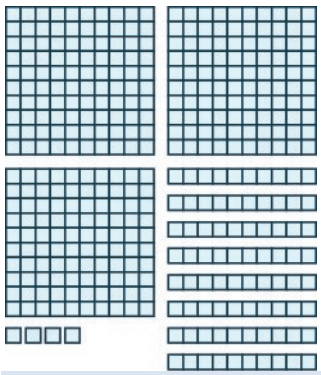
5.



Answer: 561

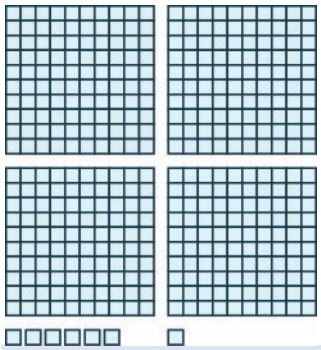
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6.



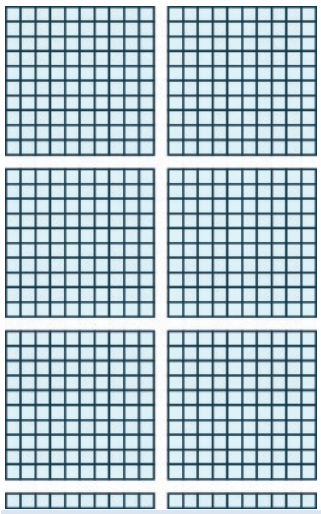
Answer: 384

7.



Answer: 407

8.



Answer: 620

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Identify the Place Value of a Digit In the following exercises, find the place value of the given digits.

9. 579,601
(a) 9
(b) 6
(c) 0
(d) 7
(e) 5
Answer: (a) thousands (b) hundreds (c) tens (d) ten thousands (e) hundred thousands

10. 398,127
(a) 9
(b) 3
(c) 2
(d) 8
(e) 7
Answer: (a) ten thousands (b) hundred thousands (c) tens (d) thousands (e) ones

11. 56,804,379
(a) 8
(b) 6
(c) 4
(d) 7
(e) 0
Answer: (a) hundred thousands (b) millions (c) thousands (d) tens (e) ten thousands

12. 78,320,465
(a) 8
(b) 4
(c) 2
(d) 6
(e) 7
Answer: (a) millions (b) hundreds (c) ten thousands (d) tens (e) ten millions

Use Place Value to Name Whole Numbersn In the following exercises, name each number in words.
13. 1,078
Answer: One thousand, seventy-eight

14. 5,902
Answer: Five thousand, nine hundred two

15. 364,510
Answer: Three hundred sixty-four thousand, five hundred ten

16. 146,023
Answer: One hundred forty-six thousand, twenty-three

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17. 5,846,103
Answer: Five million, eight hundred forty-six thousand, one hundred three

18. 1,458,398
Answer: One million, four hundred fifty-eight thousand, three hundred ninety-eight

19. 37,889,005
Answer: Thirty seven million, eight hundred eighty-nine thousand, five

20. 62,008,465
Answer: Sixty two million, eight thousand, four hundred sixty-five

21. The height of Mount Ranier is 14,410 feet.
Answer: Fourteen thousand, four hundred ten

22. The height of Mount Adams is 12,276 feet.
Answer: Twelve thousand, two hundred seventy-six

23. Seventy years is 613,200 hours.
Answer: Six hundred thirteen thousand, two hundred

24. One year is 525,600 minutes.
Answer: Five hundred twenty-five thousand, six hundred

25. The U.S. Census estimate of the population of Miami-Dade county was 2,617,176.
Answer: Two million, six hundred seventeen thousand, one hundred seventy-six

26. The population of Chicago was 2,718,782.
Answer: Two million, seven hundred eighteen thousand, seven hundred eighty-two

27. There are projected to be 23,867,000 college and university students in the US in five years.
Answer: Twenty three million, eight hundred sixty-seven thousand

28. About twelve years ago there were 20,665,415 registered automobiles in Californi(a)
Answer: Twenty million, six hundred sixty-five thousand, four hundred fifteen

29. The population of China is expected to reach 1,377,583,156 in 2016.
Answer: One billion, three hundred seventy-seven million, five hundred eighty-three thousand, one hundred fifty-six

30. The population of India is estimated at 1,267,401,849 as of July 1, 2014.
Answer: One billion, two hundred seventy-six million, four hundred one thousand, eight hundred forty nine.

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Use Place Value to Write Whole Numbers In the following exercises, write each number as a whole number using digits.

31. four hundred twelve
Answer: 412

32. two hundred fifty-three
Answer: 253

33. thirty-five thousand, nine hundred seventy-five
Answer: 35,975

34. sixty-one thousand, four hundred fifteen
Answer: 61,415

35. eleven million, forty-four thousand, one hundred sixty-seven
Answer: 11,044,167

36. eighteen million, one hundred two thousand, seven hundred eighty-three
Answer: 18,102,783

37. three billion, two hundred twenty-six million, five hundred twelve thousand, seventeen
Answer: 3,226,512,017

38. eleven billion, four hundred seventy-one million, thirty-six thousand, one hundred six
Answer: 11,471,036,106

39. The population of the world was estimated to be seven billion, one hundred seventy-three million peopl(e)
Answer: 7,173,000,000

40. The age of the solar system is estimated to be four billion, five hundred sixty-eight million years.
Answer: 4,568,000,000

41. Lake Tahoe has a capacity of thirty-nine trillion gallons of water.
Answer: 39,000,000,000,000

42. The federal government budget was three trillion, five hundred billion dollars.
Answer: 3,500,000,000,000

Round Whole Numbers In the following exercises, round to the indicated place valu(e)

43. Round to the nearest ten: (a) 386 (b) 2,931
Answer: (a) 390 (b) 2,930

44. Round to the nearest ten: (a) 792 (b) 5,647
Answer: (a) 790 (b) 5,650

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45. Round to the nearest hundred: (a) 13,748 (b) 391,794
Answer: (a) 13,700 (b) 391,800

46. Round to the nearest hundred: (a) 28,166 (b) 481,628
Answer: (a) 28,200 (b) 481,600

47. Round to the nearest ten: (a) 1,492 (b) 1,497
Answer: (a) 1490 (b) 1500

48. Round to the nearest thousand: (a) 2391 (b) 2795
Answer: (a) 2,000 (b) 3,000

49. Round to the nearest hundred: (a) 63,994 (b) 63,949
Answer: (a) 64,000 b) 63,900

50. Round to the nearest thousand: (a) 163,584 (b) 163,246
Answer: (a) 164,000 (b) 163,000

Everyday Math

51. **Writing a check**. Jorge bought a car for $24,493. He paid for the car with a check. Write the purchase price in words.
Answer: Twenty four thousand, four hundred ninety-three dollars

52. **Writing a check.** Marissa's kitchen remodeling cost $18,549. She wrote a check to the contractor. Write the amount paid in words.
Answer: Eighteen thousand, five hundred forty-nine dollars

53. **Buying a car.** Jorge bought a car for $24,493. Round the price to the nearest…
(a) ten dollars
(b) hundred dollars
(c) thousand dollars
(d) ten-thousand dollars
Answer: (a) $24,490 (b) $24,500 (c) $24,000 (d) $20,000

54. **Remodeling a Kitchen.** Marissa's kitchen remodeling cost $18,549. Round the cost to the nearest…
(a) ten dollars
(b) hundred dollars
(c) thousand dollars
(d) ten-thousand dollars
Answer: (a) $18,550 (b) $18,500 (c) $19,000 (d) $20,000

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55. **Population.** The population of China was 1,355,692,544 in 2014. Round the population to the nearest…
(a) billion people
(b) hundred-million people
(c) million people
Answer: (a) 1,000,000,000 (b) 1,400,000,000 (c) 1,356,000,000

56. **Astronomy** The average distance between Earth and the sun is 149,597,888 kilometers. Round the distance to the nearest
(a) hundred-million kilometers
(b) ten-million kilometers
(c) million kilometers
Answer: (a) 100,000,000 kilometers (b) 150,000,000 kilometers (c) 150,000,000 kilometers

Writing Exercises

57. In your own words, explain the difference between the counting numbers and the whole numbers.
Answer: Answers may vary. The whole numbers are the counting numbers with the inclusion of zero.

58. Give an example from your everyday life where it helps to round numbers.
Answer: Answers may vary, but may include estimating mileage

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Prealgebra
1: Whole Numbers
1.2 Add Whole Numbers

Practice Makes Perfect

Use Addition Notation In the following exercises, translate the following from math expressions to words.

59. $5+2$
Answer: five plus two; the sum of 5 and 2.

60. $6+3$
Answer: six plus three; the sum of 6 and 3.

61. $13+18$
Answer: thirteen plus eighteen; the sum of 13 and 18

62. $15+16$
Answer: fifteen plus sixteen; the sum of 15 and 16

63. $214+642$
Answer: two hundred fourteen plus six hundred forty-two; the sum of 214 and 642

64. $438+113$
Answer: four hundred thirty-eight plus one hundred thirteen; the sum of 438 and 113

Model Addition of Whole Numbers In the following exercises, model the addition.

65. $2+4$
Answer: $2+4=6$ 

66. $5+3$
Answer: $5+3=8$ 

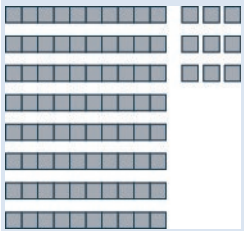
67. $8+4$
Answer: $8+4=12$ 

68. $5+9$
Answer: $5+9=14$ 

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69. $14 + 75$

Answer: $14 + 75 = 89$



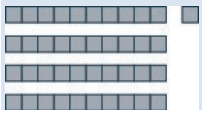
70. $15 + 63$

Answer: $15 + 63 = 78$



71. $16 + 25$

Answer: $16 + 25 = 41$



72. $14 + 27$

Answer: $14 + 27 = 41$



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Add Whole Numbers In the following exercises, fill in the missing values in each chart.

73.

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2		4	5	6	7		9
1	1	2	3	4			7	8	9	
2		3	4	5	6		8			11
3	3		5		7	8		10		12
4	4	5			8	9		11	12	
5	5	6	7	8			11		13	
6	6	7	8		10			13		15
7			9	10		12			15	16
8	8	9		11			14		16	
9	9	10	11		13	14			17	

Answer:

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13
5	5	6	7	8	9	10	11	12	13	14
6	6	7	8	9	10	11	12	13	14	15
7	7	8	9	10	11	12	13	14	15	16
8	8	9	10	11	12	13	14	15	16	17
9	9	10	11	12	13	14	15	16	17	18

74.

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4		6		8	9
1	1	2	3		5	6		8		10
2	2		4		6	7		9	10	
3		4		6			9		11	
4	4	5	6	7			10	11		13
5	5	6		8	9		11	12	13	
6			8	9			12	13		15
7	7	8		10		12			15	16
8	8	9	10		12		14		16	17
9			11	12	13			16		

Answer:

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13
5	5	6	7	8	9	10	11	12	13	14
6	6	7	8	9	10	11	12	13	14	15
7	7	8	9	10	11	12	13	14	15	16
8	8	9	10	11	12	13	14	15	16	17
9	9	10	11	12	13	14	15	16	17	18

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75.

+	3	4	5	6	7	8	9
6							
7							
8							
9							

Answer:

+	3	4	5	6	7	8	9
6	9	10	11	12	13	14	15
7	10	11	12	13	14	15	16
8	11	12	13	14	15	16	17
9	12	13	14	15	16	17	18

76.

+	6	7	8	9
3				
4				
5				
6				
7				
8				
9				

Answer:

+	6	7	8	9
3	9	10	11	12
4	10	11	12	13
5	11	12	13	14
6	12	13	14	15
7	13	14	15	16
8	14	15	16	17
9	15	16	17	18

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77.

+	5	6	7	8	9
5					
6					
7					
8					
9					

Answer:

+	5	6	7	8	9
5	10	11	12	13	14
6	11	12	13	14	15
7	12	13	14	15	16
8	13	14	15	16	17
9	14	15	16	17	18

78.

+	6	7	8	9
6				
7				
8				
9				

Answer:

+	6	7	8	9
6	12	13	14	15
7	13	14	15	16
8	14	15	16	17
9	15	16	17	18

In the following exercises, add.

79. (a) $0+13$ (b) $13+0$

Answer: (a) 13 (b) 13

80. (a) $0+5280$ (b) $5280+0$

Answer: (a) 5,280 (b) 5,280

81. (a) $8+3$ (b) $3+8$

Answer: (a) 11 (b) 11

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82. (a) $7+5$ (b) $5+7$

Answer: (a) 12 (b) 12

83. $45+33$

Answer: 78

84. $37+22$

Answer: 59

85. $71+28$

Answer: 99

86. $43+53$

Answer: 96

87. $26+59$

Answer: 85

88. $38+17$

Answer: 55

89. $64+78$

Answer: 142

90. $92+39$

Answer: 131

91. $168+325$

Answer: 493

92. $247+149$

Answer: 396

93. $584+277$

Answer: 861

94. $175+648$

Answer: 823

95. $832+199$

Answer: 1,031

96. $775+369$

Answer: 1,144

97. $6{,}358+492$

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Answer: 6,850

98. $9{,}184 + 578$

Answer: 9,762

99. $3{,}740 + 18{,}593$

Answer: 22,333

100. $6{,}118 + 15{,}990$

Answer: 22,108

101. $485{,}012 + 619{,}848$

Answer: 1,104,860

102. $368{,}911 + 857{,}289$

Answer: 1,226,200

103. $24{,}731 + 592 + 3{,}868$

Answer: 29,191

104. $28{,}925 + 817 + 4{,}593$

Answer: 34,335

105. $8{,}015 + 76{,}946 + 16{,}570$

Answer: 101,531

106. $6{,}291 + 54{,}107 + 28{,}635$

Answer: 89,033

Translate English Phrases to Math Notation In the following exercises, translate each phrase into math notation and then simplify.

107. the sum of 13 and 18

Answer: 13 + 18 = 31

108. the sum of 12 and 19

Answer: 12 + 19 = 31

109. the sum of 90 and 65

Answer: 90 + 65 = 155

110. the sum of 70 and 38

Answer: 70 + 38 = 108

111. 33 increased by 49

Answer: 33 + 49 = 82

112. 68 increased by 25

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Answer: 68 + 25 = 93

113. 250 more than 599
Answer: 599 + 250 = 849

114. 115 more than 286
Answer: 115 + 286 = 401

115. the total of 628 and 77
Answer: 628 + 77 = 705

116. the total of 593 and 79
Answer: 593 + 79 = 672

117. 1,482 added to 915
Answer: 915 + 1,482 = 2,397

118. 2,719 added to 682
Answer: 682 + 2,719 = 3,401

Add Whole Numbers in Applications In the following exercises, solve the problem.

119. **Home Remodeling.** Sophia remodeled her kitchen and bought a new range, microwave, and dishwasher. The range cost $1,100, the microwave cost $250, and the dishwasher cost $525. What was the total cost of these 3 appliances?
Answer: The total cost was $1,875.

120. **Sports Equipment.** Aiden bought a baseball bat, helmet, and glove. The bat cost $299, the helmet cost $35, and the glove cost $68. What was Aiden's total cost?
Answer: The total cost was $402.

121. **Bike Riding.** Ethan rode his bike 14 miles on Monday, 19 miles on Tuesday, 12 miles on Wednesday, 25 miles on Friday, and 68 miles on Saturday. What was the total number of miles Ethan rode?
Answer: Ethan rode 138 miles.

122. **Business.** Chloe has a flower shop. Last week she made 19 floral arrangements on Monday, 12 on Tuesday, 23 on Wednesday, 29 on Thursday, and 44 on Friday. What was the total number of floral arrangements Chloe made?
Answer: Chloe made 127 floral arrangements.

123. **Apartment Size.** Jackson lives in a 7 room apartment. The number of square feet in each room is 238, 120, 156, 196, 100, 132, and 225. What is the total number of square feet in all 7 rooms?
Answer: The total square footage in the rooms is 1,167.

124. **Weight.** Seven men rented a fishing boat. The weight of each man was 175, 192, 148, 169, 205, 181, and 225. What was the total weight of the seven men?
Answer: The total weight of the men is 1295.

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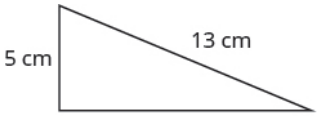
125. **Salary.** Last year Natalie's salary was $82,572. Two years ago, her salary was $79,316, and three years ago it was $75,298. What is the total amount of Natalie's salary for the past three years?
Answer: Natalie's total salary is $237,186.

126. **Home Sales.** Emma is a realtor. Last month, she sold three houses. The selling price of the houses was $292,540, $505,875, and $423,699. What was the total of the three selling prices?
Answer: The total of the selling prices is $1,222,114.

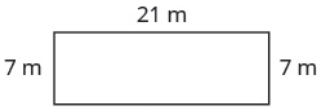
In the following exercises, find the perimeter of each figure.



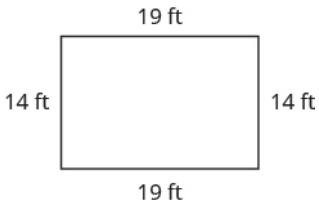
127.
Answer: The perimeter of the figure is 44 inches.



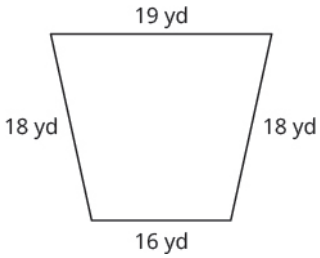
128.
Answer: The perimeter of the figure is 30 centimeters.



129.
Answer: The perimeter of the figure is 56 meters.

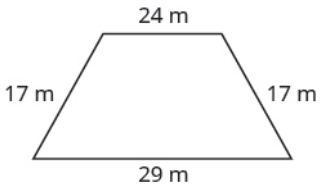


130.
Answer: The perimeter of the figure is 66 feet.

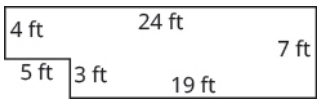


131.
Answer: The perimeter of the figure is 71 yards.

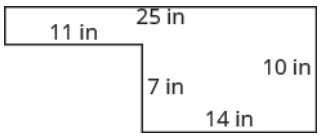
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132. 

Answer: The perimeter of the figure is 87 meters.

133. 

Answer: The perimeter of the figure is 62 feet.

134. 

Answer: The perimeter of the figure is 70 inches.

Everyday Math

135. **Calories** Paulette had a grilled chicken salad, ranch dressing, and a 16-ounce cola for lunch. On the restaurant's nutrition chart, she saw that each item had the following number of calories:
Grilled Chicken Salad – 320 calories
Ranch dressing – 170 calories
16-ounce drink – 150 calories
What was the total number of calories of Paulette's lunch?

Answer: The total number of calories was 640.

136. **Calories** Fred had a grilled chicken sandwich, a small order of fries, and a chocolate shake for dinner. The restaurant's nutrition chart lists the following calories for each item:
Grilled chicken sandwich – 420 calories
Small fries – 230 calories
12-oz chocolate shake – 580 calories
What was the total number of calories of Fred's dinner?

Answer: The total number of calories was 1,230.

137. **Test scores** A students needs a total of 400 points on 5 tests to pass a course. The student scored 82, 91, 75, 88, and 70. Did the student pass, and if so, by how many points?

Answer: Yes, the student scored 406 points.

138. **Elevators** The maximum weight capacity of an elevator is 1150 pounds. Six men are in the elevator. Their weights are 210, 145, 183, 230, 159, and 164 pounds. Is the total weight below the elevator's maximum capacity?

Answer: Yes, the total weight is 1091 pounds.

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Writing Exercises

139. How confident do you feel about your knowledge of the addition facts? If you are not fully confident, what will you do to improve your skills?
Answer: Answers will vary.

140. How have you used models to help you learn the addition facts?
Answer: Answers will vary

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Prealgebra
1: Whole Numbers
1.3 Subtract Whole Numbers

Practice Makes Perfect

For the following exercises, translate from math notation to words.

141. $15 - 9$
Answer: fifteen minus nine; the difference of fifteen and nine

142. $18 - 16$
Answer: eighteen minus sixteen; the difference of eighteen and sixteen

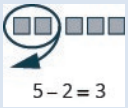
143. $42 - 35$
Answer: forty-two minus thirty-five; the difference of forty-two and thirty-five

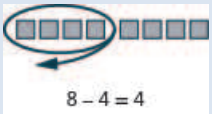
144. $83 - 64$
Answer: eighty-three minus sixty-four; the difference of eighty-three and sixty-four

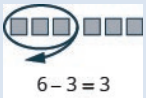
145. $675 - 350$
Answer: six hundred seventy-five minus three hundred fifty; the difference of six hundred seventy-five and three hundred fifty

146. $790 - 525$
Answer: seven hundred ninety minus five hundred twenty-five; the difference of seven hundred ninety and five hundred twenty-five

Model Subtraction of Whole Numbers For the following exercises, model the subtraction.

147. $5 - 2$
Answer:


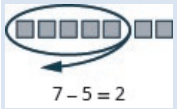
148. $8 - 4$
Answer:


149. $6 - 3$
Answer:


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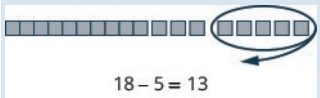
150. $7 - 5$

Answer:



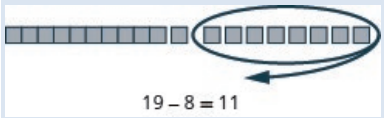
151. $18 - 5$

Answer:



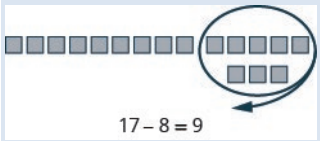
152. $19 - 8$

Answer:



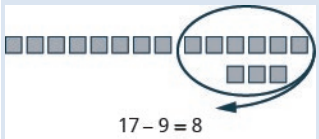
153. $17 - 8$

Answer:



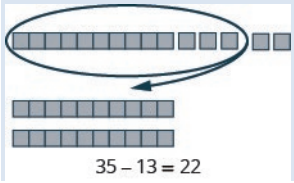
154. $17 - 9$

Answer:



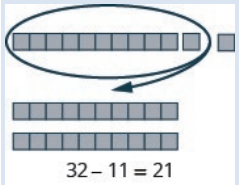
155. $35 - 13$

Answer:



156. $32 - 11$

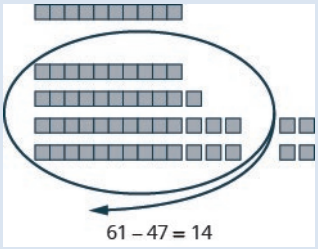
Answer:



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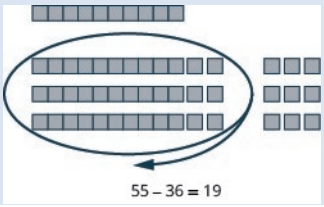
157. $61 - 47$

Answer:



158. $55 - 36$

Answer:



Subtract Whole Numbers For the following exercises, subtract and then check by adding.

159. $9 - 4$

Answer: 5

160. $9 - 3$

Answer: 6

161. $8 - 0$

Answer: 8

162. $2 - 0$

Answer: 2

163. $38 - 16$

Answer: 22

164. $45 - 21$

Answer: 24

165. $85 - 52$

Answer: 33

166. $99 - 47$

Answer: 52

167. $493 - 370$

Answer: 123

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168. $268 - 106$
Answer: 162

169. $5{,}946 - 4{,}625$
Answer: 1,321

170. $7{,}775 - 3{,}251$
Answer: 4,524

171. $75 - 47$
Answer: 28

172. $63 - 59$
Answer: 4

173. $461 - 239$
Answer: 222

174. $486 - 257$
Answer: 229

175. $525 - 179$
Answer: 346

176. $542 - 288$
Answer: 254

177. $6{,}318 - 2{,}799$
Answer: 3,519

178. $8{,}153 - 3{,}978$
Answer: 4,175

179. $2{,}150 - 964$
Answer: 1,186

180. $4{,}245 - 899$
Answer: 3,346

181. $43{,}650 - 8{,}982$
Answer: 34,668

182. $35{,}162 - 7{,}885$
Answer: 27,277

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Translate English Phrases to Algebraic Expressions For the following exercises, translate and simplify.

183. The difference of 10 and 3
Answer: 10 – 3; 7

184. The difference of 12 and 8
Answer: 12 – 8; 4

185. The difference of 15 and 4
Answer: 15 – 4; 11

186. The difference of 18 and 7
Answer: 18 – 7; 11

187. Subtract 6 from 9
Answer: 9 – 6; 3

188. Subtract 8 from 9
Answer: 9 – 8; 1

189. Subtract 28 from 75
Answer: 75 – 28; 47

190. Subtract 59 from 81
Answer: 81 – 59; 22

191. 45 decreased by 20
Answer: 45 – 20; 25

192. 37 decreased by 24
Answer: 37 – 24; 13

193. 92 decreased by 67
Answer: 92 – 67; 25

194. 75 decreased by 49
Answer: 75 – 49; 26

195. 12 less than 16
Answer: 16 – 12; 4

196. 15 less than 19
Answer: 19 – 15; 4

197. 38 less than 61
Answer: 61 – 38; 23

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198. 47 less than 62
Answer: 62 – 47; 15

Mixed Practice For the following exercises, simplify.

199. $76-47$
Answer: 29

200. $91-53$
Answer: 38

201. $256-184$
Answer: 72

202. $305-262$
Answer: 43

203. $719+341$
Answer: 1060

204. $647+528$
Answer: 1175

205. $2{,}015-1{,}993$
Answer: 22

206. $2{,}020-1{,}984$
Answer: 36

For the following exercises, translate and simplify.

207. Seventy-five more than thirty-five
Answer: 75 + 35; 110

208. Sixty more than ninety-three
Answer: 60 + 93; 153

209. 13 less than 41
Answer: 41 – 13; 28

210. 28 less than 36
Answer: 36 – 28; 8

211. The difference of 100 and 76
Answer: 100 – 76; 24

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212. The difference of 1000 and 945
Answer: 1000 – 945; 55

Subtract Whole Numbers in Applications For the following exercises, solve.

213. **Temperature** The high temperature on June 2 in Las Vegas was 80 degrees and the low temperature was 63 degrees. What was the difference between the high and low temperatures?
Answer: The difference between the high and low temperature was 17 degrees.

214. **Temperature** The high temperature on June 1 in Phoenix was 97 degrees and the low was 73 degrees. What was the difference between the high and low temperatures?
Answer: The difference between the high and low temperature was 24 degrees.

215. **Class size** Olivia's third grade class has 35 children. Last year, her second grade class had 22 children. What is the difference between the number of children in Olivia's third grade class and her second grade class?
Answer: The difference between the third grade and second grade was 13 children.

216. **Class size** There are 82 students in the school band and 46 in the school orchestra. What is the difference between the number of students in the band and the orchestra?
Answer: The difference between the band and the orchestra was 36 students.

217. **Shopping** A mountain bike is on sale for $399. Its regular price is $650. What is the difference between the regular price and the sale price?
Answer: The difference between the regular price and sale price is $251.

218. **Shopping** A mattress set is on sale for $755. Its regular price is $1600. What is the difference between the regular price and the sale price?
Answer: The difference between the regular price and sale price is $845.

219. **Savings** John wants to buy a laptop that costs $840. He has $685 in his savings account. How much more does he need to save in order to buy the laptop?
Answer: John needs to save $155 more.

220. **Banking** Mason had $1,125 in his checking account. He spent $892. How much money does he have left?
Answer: Mason has $233 left.

Everyday Math

221. **Road trip** Noah was driving from Philadelphia to Cincinnati, a distance of 502 miles. He drove 115 miles, stopped for gas, and then drove another 230 miles before lunch. How many more miles did he have to travel?
Answer: Noah had to travel 157 more miles.

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222. **Test Scores** Sara needs 350 points to pass her course. She scored 75, 50, 70, and 80 on her first four tests. How many more points does Sara need to pass the course?
Answer: Sara needs 75 more points to pass the course.

Writing Exercises

223. Explain how subtraction and addition are related.
Answer: Answers may vary.

224. How does knowing addition facts help you to subtract numbers?
Answer: Answers may vary. Knowing addition facts will allow you to check your answers from subtraction.

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Prealgebra
1: Whole Numbers
1.4 Multiply Whole Numbers

Practice Makes Perfect

Use Multiplication Notation For the following exercises, translate from math notation to words.

225. 4×7

Answer: four times seven; the product of four and seven

226. 8×6

Answer: eight times six; the product of eight and six

227. $5 \cdot 12$

Answer: five times twelve; the product of five and twelve

228. $3 \cdot 9$

Answer: three times nine; the product of three and nine

229. $(10)(25)$

Answer: ten times twenty-five; the product of ten and twenty-five

230. $(20)(15)$

Answer: twenty times fifteen; the product of twenty and fifteen

231. $42(33)$

Answer: forty-two times thirty-three; the product of forty-two and thirty-three

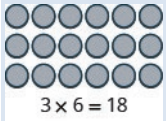
232. $39(64)$

Answer: thirty-nine times sixty-four; the product thirty-nine and sixty-four

Model Multiplication of Whole Numbers For the following exercises, model the multiplication.

233. 3×6

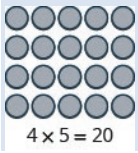
Answer:



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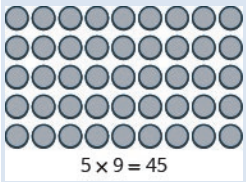
234. 4×5

Answer:



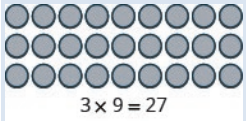
235. 5×9

Answer:



236. 3×9

Answer:



Multiply Whole Numbers For the following exercises, fill in the missing values in each chart.

237.

×	0	1	2	3	4	5	6	7	8	9
0	0	0	0		0	0	0	0		0
1	0	1	2	3			6	7	8	
2		2	4	6	8		12			18
3	0		6		12	15		21		27
4	0	4			16	20		28	32	
5	0	5	10	15			30		40	
6	0	6	12		24			42		54
7			14	21		35			56	63
8	0	8		24			48		64	
9	0	9	18		36	45			72	

Answer:

×	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	15	20	25	30	35	40	45
6	0	6	12	18	24	30	36	42	48	54
7	0	7	14	21	28	35	42	49	56	63
8	0	8	16	24	32	40	48	56	64	72
9	0	9	18	27	36	45	54	63	72	81

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238.

×	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0		0		0	0
1	0	1	2		4	5		7		9
2	0		4		8	10		14	16	
3		3		9			18		24	
4	0	4	8	12			24	28		36
5	0	5		15	20		30	35	40	
6			12	18			36	42		54
7	0	7		21		35			56	63
8	0	8	16		32		48		64	72
9			18	27	36			63		

Answer:

×	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	15	20	25	30	35	40	45
6	0	6	12	18	24	30	36	42	48	54
7	0	7	14	21	28	35	42	49	56	63
8	0	8	16	24	32	40	48	56	64	72
9	0	9	18	27	36	45	54	63	72	81

239.

×	3	4	5	6	7	8	9
4							
5							
6							
7							
8							
9							

Answer:

×	3	4	5	6	7	8	9
4	12	16	20	24	28	32	36
5	15	20	25	30	35	40	45
6	18	24	30	36	42	48	54
7	21	28	35	42	49	56	63
8	24	32	40	48	56	64	72
9	27	36	45	54	63	72	81

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240.

×	4	5	6	7	8	9
3						
4						
5						
6						
7						
8						
9						

Answer:

×	4	5	6	7	8	9
3	12	15	18	21	24	27
4	16	20	24	28	32	36
5	20	25	30	35	40	45
6	24	30	36	42	48	54
7	28	35	42	49	56	63
8	32	40	48	56	64	72
9	36	45	54	63	72	81

241.

×	3	4	5	6	7	8	9
6							
7							
8							
9							

Answer:

×	3	4	5	6	7	8	9
6	18	24	30	36	42	48	54
7	21	28	35	42	49	56	63
8	24	32	40	48	56	64	72
9	27	36	45	54	63	72	81

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242.

×	6	7	8	9
3				
4				
5				
6				
7				
8				
9				

Answer:

×	6	7	8	9
3	18	21	24	27
4	24	28	32	36
5	30	35	40	45
6	36	42	48	54
7	42	49	56	63
8	48	56	64	72
9	54	63	72	81

243.

×	5	6	7	8	9
5					
6					
7					
8					
9					

Answer:

×	5	6	7	8	9
5	25	30	35	40	45
6	30	36	42	48	54
7	35	42	49	56	63
8	40	48	56	64	72
9	45	54	63	72	81

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244.

×	6	7	8	9
6				
7				
8				
9				

Answer:

×	6	7	8	9
6	36	42	48	54
7	42	49	56	63
8	48	56	64	72
9	54	63	72	81

For the following exercises, multiply.

245. $0 \cdot 15$

Answer: 0

246. $0 \cdot 41$

Answer: 0

247. $(99)0$

Answer: 0

248. $(77)0$

Answer: 0

249. $1 \cdot 43$

Answer: 43

250. $1 \cdot 34$

Answer: 34

251. $(28)1$

Answer: 28

252. $(65)1$

Answer: 65

253. $1(240{,}055)$

Answer: 240,055

254. $1(189{,}206)$

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Answer: 189,206

255. (a) $7 \cdot 6$ (b) $6 \cdot 7$

Answer: (a) 42 (b) 42

256. (a) 8×9 (b) 9×8

Answer: (a) 72 (b) 72

257. $(79)(5)$

Answer: 395

258. $(58)(4)$

Answer: 232

259. $275 \cdot 6$

Answer: 1,650

260. $638 \cdot 5$

Answer: 3,190

261. $3{,}421 \times 7$

Answer: 23,947

262. $9{,}143 \times 3$

Answer: 27,429

263. $52(38)$

Answer: 1,976

264. $37(45)$

Answer: 1,665

265. $96 \cdot 73$

Answer: 7,008

266. $89 \cdot 56$

Answer: 4,984

267. 27×85

Answer: 2,295

268. 53×98

Answer: 5,194

269. $23 \cdot 10$

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Answer: 230

270. $19 \cdot 10$

Answer: 190

271. $(100)(36)$

Answer: 3,600

272. $(100)(25)$

Answer: 2,500

273. $1{,}000(88)$

Answer: 88,000

274. $1{,}000(46)$

Answer: 46,000

275. $50 \times 1{,}000{,}000$

Answer: 50,000,000

276. $30 \times 1{,}000{,}000$

Answer: 30,000,000

277. 247×139

Answer: 34,333

278. 156×328

Answer: 51,168

279. $586(721)$

Answer: 422,506

280. $472(855)$

Answer: 403,560

281. $915 \cdot 879$

Answer: 804,285

282. $968 \cdot 926$

Answer: 896,368

283. $(104)(256)$

Answer: 26,624

284. $(103)(497)$

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Answer: 51,191

285. $348(705)$

Answer: 245,340

286. $485(602)$

Answer: 291,970

287. $2{,}719 \times 543$

Answer: 1,476,417

288. $3{,}581 \times 724$

Answer: 2,592,644

Translate Word Phrases to Math Notation For the following exercises, translate and simplify.

289. the product of 18 and 33

Answer: $18 \cdot 33$; 594

290. the product of 15 and 22

Answer: $15 \cdot 22$; 330

291. fifty-one times sixty-seven

Answer: $51(67)$; 3,417

292. forty-eight times seventy-one

Answer: $48(71)$; 3,408

293. twice 249

Answer: 2(249); 498

294. twice 589

Answer: 2(589); 1,178

295. ten times three hundred seventy-five

Answer: 10(375); 3,750

296. ten times two hundred fifty-five

Answer: 10(255); 2,550

Mixed Practice For the following exercises, simplify.

297. 38×37

Answer: 1,406

298. 86×29

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Answer: 2,494

299. $415-267$
Answer: 148

300. $341-285$
Answer: 56

301. $6{,}251+4{,}749$
Answer: 11,000

302. $3{,}816+8{,}184$
Answer: 12,000

303. $(56)(204)$
Answer: 11,424

304. $(77)(801)$
Answer: 61,677

305. $947 \cdot 0$
Answer: 0

306. $947+0$
Answer: 947

307. $15{,}382+1$
Answer: 15,383

308. $15{,}382 \cdot 1$
Answer: 15,382

For the following exercises, translate and simplify.

309. the difference of 50 and 18
Answer: 50 – 18; 32

310. the difference of 90 and 66
Answer: 90 – 66; 24

311. twice 35
Answer: 2(35); 70

312. twice 140
Answer: 2(140); 280

313. 20 more than 980

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Answer: 20 + 980; 1,000

314. 65 more than 325
Answer: 65 + 325; 390

315. the product of 12 and 875
Answer: 12(875); 10,500

316. the product of 15 and 905
Answer: 15(905); 13,575

317. subtract 74 from 89
Answer: 89 – 74; 15

318. subtract 45 from 99
Answer: 99 – 45; 54

319. the sum of 3,075 and 95
Answer: 3,075 + 95; 3,170

320. the sum of 6,308 and 724
Answer: 6308 + 724; 7,032

321. 366 less than 814
Answer: 814 – 366; 448

322. 388 less than 925
Answer: 925 – 388; 537

Multiply Whole Numbers in Applications For the following exercises, solve.

323. **Party Supplies.** Tim brought 9 six-packs of soda to a club party. How many cans of soda did Tim bring?
Answer: Tim brought 54 cans of soda to the party.

324. **Sewings** Kanisha is making a quilt. She bought 6 cards of buttons. Each card had four buttons on it. How many buttons did Kanisha buy?
Answer: Kanisha bought 24 buttons.

325. **Field Trip.** Seven school busses let off their students in front of a museum in Washington, DC. Each school bus had 44 students. How many students were there?
Answer: There were 308 students.

326. **Gardening.** Kathryn bought 8 flats of impatiens for her flower bed. Each flat has 24 flowers. How many flowers did Kathryn buy?
Answer: Kathryn bought 192 flowers.

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327. **Charity.** Rey donated 15 twelve-packs of t-shirts to a homeless shelter. How many t-shirts did he donate?
Answer: Rey donated 180 t-shirts.

328. **School.** There are 28 classrooms at Anna C. Scott elementary school. Each classroom has 26 student desks. What is the total number of student desks?
Answer: There are 728 student desks.

329. **Recipe.** Stephanie is making punch for a party. The recipe calls for twice as much fruit juice as club soda. If she uses 10 cups of club soda, how much fruit juice should she use?
Answer: Stephanie should use 20 cups of fruit juice.

330. **Gardening.** Hiroko is putting in a vegetable garden. He wants to have twice as many lettuce plants as tomato plants. If he buys 12 tomato plants, how many lettuce plants should he get?
Answer: Hiroko should buy 24 lettuce plants.

331. **Government.** The United States Senate has twice as many senators as there are states in the United States. There are 50 states. How many senators are there in the United States Senate?
Answer: There are 100 senators in the U.S. senate.

332. **Recipe.** Andrea is making potato salad for a buffet luncheon. The recipe says the number of servings of potato salad will be twice the number of pounds of potatoes. If she buys 30 pounds of potatoes, how many servings of potato salad will there be?
Answer: Andrea will make 60 servings.

333. **Painting.** Jane is painting one wall of her living room. The wall is rectangular, 13 feet wide by 9 feet high. What is the area of the wall?
Answer: The area of the wall is 117 square feet.

334. **Home Décor.** Shawnte bought a rug for the hall of her apartment. The rug is 3 feet wide by 18 feet long. What is the area of the rug?
Answer: The area of the rug is 54 square feet.

335. **Room Size.** The meeting room in a senior center is rectangular, with length 42 feet and width 34 feet. What is the area of the meeting room?
Answer: The area of the room is 1,428 square feet.

336. **Gardening.** June has a vegetable garden in her yard. The garden is rectangular, with length 23 feet and width 28 feet. What is the area of the garden?
Answer: The area of the garden is 644 square feet.

337. **NCAA Basketball.** According to NCAA regulations, the dimensions of a rectangular basketball court must be 94 feet by 50 feet. What is the area of the basketball court?
Answer: The area of the court is 4,700 square feet.

338. **NCAA Football.** According to NCAA regulations, the dimensions of a rectangular football field must be 360 feet by 160 feet. What is the area of the football field?
Answer: The area of the field is 57,600 square feet.

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Everyday Math

339. **Stock Market.** Javier owns 300 shares of stock in one company. On Tuesday, the stock price rose $12 per share. How much money did Javier's portfolio gain?
Answer: Javier's portfolio gained $3,600.

340. **Salary.** Carlton got a $200 raise in each paycheck. He gets paid 24 times a year. How much higher is his new annual salary?
Answer: Carlton's new salary is $4,800 higher.

Writing Exercises

341. How confident do you feel about your knowledge of the multiplication facts? If you are not fully confident, what will you do to improve your skills?
Answer: Answers will vary.

342. How have you used models to help you learn the multiplication facts?
Answer: Answers will vary.

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Prealgebra
1: Whole Numbers
1.5 Divide Whole Numbers

Practice Makes Perfect

Use Division Notation For the following exercises, translate from math notation to words.

343. $54 \div 9$

Answer: fifty-four divided by nine; the quotient of fifty-four and nine

344. $\frac{56}{7}$

Answer: fifty-six divided by seven; the quotient of fifty-six and seven

345. $\frac{32}{8}$

Answer: thirty-two divided by eight; the quotient of thirty-two and eight

346. $6\overline{)42}$

Answer: forty-two divided by six; the quotient of forty-two and six

347. $48 \div 6$

Answer: forty-eight divided by six; the quotient of forty-eight and six

348. $\frac{63}{9}$

Answer: sixty-three divided by nine; the quotient of sixty-three and nine

349. $7\overline{)63}$

Answer: sixty-three divided by seven; the quotient of sixty-three and seven

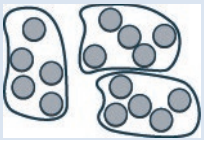
350. $72 \div 8$

Answer: seventy-two divided by eight; the quotient of seventy-two and eight

Model Division of Whole Numbers For the following exercises, model the division.

351. $15 \div 5$

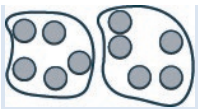
Answer:



352. $10 \div 5$

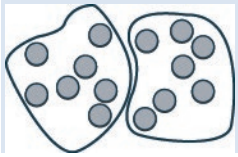
Answer:

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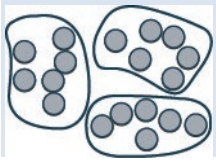
353. $\frac{14}{7}$

Answer:



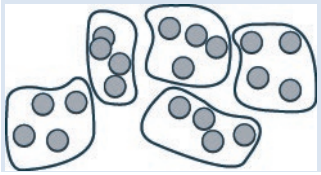
354. $\frac{18}{6}$

Answer:



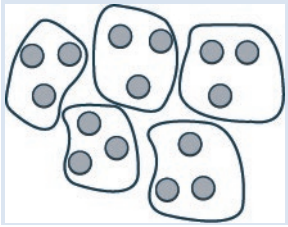
355. $4\overline{)20}$

Answer:



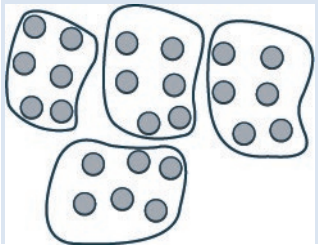
356. $3\overline{)15}$

Answer:



357. $24 \div 6$

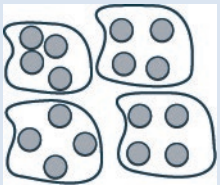
Answer:



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358. $16 \div 4$

Answer:



Divide Whole Numbers For the following exercises, divide. Then check by multiplying.

359. $18 \div 2$

Answer: 9

360. $14 \div 2$

Answer: 7

361. $\frac{27}{3}$

Answer: 9

362. $\frac{30}{3}$

Answer: 10

363. $4\overline{)28}$

Answer: 7

364 $4\overline{)36}$

Answer: 9

365. $\frac{45}{5}$

Answer: 9

366. $\frac{35}{5}$

Answer: 7

367. $72 / 8$

Answer: 9

368. $8\overline{)64}$

Answer: 8

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369. $\frac{35}{7}$

Answer: 5

370. $42 \div 7$

Answer: 6

371. $15\overline{)15}$

Answer: 1

372. $12\overline{)12}$

Answer: 1

373. $43 \div 43$

Answer: 1

374. $37 \div 37$

Answer: 1

375. $\frac{23}{1}$

Answer: 23

376. $\frac{29}{1}$

Answer: 29

377. $19 \div 1$

Answer: 19

378. $17 \div 1$

Answer: 17

379. $8\overline{)0}$

Answer: 0

380. $0 \div 8$

Answer: 0

381. $\frac{5}{0}$

Answer: undefined

382. $\frac{9}{0}$

Answer: undefined

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383. $\frac{26}{0}$

Answer: undefined

384. $\frac{32}{0}$

Answer: undefined

385. $12\overline{)0}$

Answer: 0

386. $16\overline{)0}$

Answer: 0

387. $72 \div 3$

Answer: 24

388. $57 \div 3$

Answer: 19

389. $\frac{96}{8}$

Answer: 12

390. $\frac{78}{6}$

Answer: 13

391. $5\overline{)465}$

Answer: 93

392. $4\overline{)528}$

Answer: 132

393. $924 \div 7$

Answer: 132

394. $861 \div 7$

Answer: 123

395. $\frac{5,226}{6}$

Answer: 871

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396. $\frac{3,776}{8}$

Answer: 472

397. $4\overline{)31,324}$

Answer: 7,831

398. $5\overline{)46,855}$

Answer: 9,371

399. $7,209 \div 3$

Answer: 2403

400. $4,806 \div 3$

Answer: 1602

401. $5,406 \div 6$

Answer: 901

402. $3,208 \div 4$

Answer: 802

403. $4\overline{)2,816}$

Answer: 704

404. $6\overline{)3,624}$

Answer: 604

405. $\frac{91,881}{9}$

Answer: 10,209

406. $\frac{83,256}{8}$

Answer: 10,407

407. $2,470 \div 7$

Answer: 352 R6

408. $3,741 \div 7$

Answer: 534 R3

409. $8\overline{)55,305}$

Answer: 6,913 R1

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410. $9\overline{)51{,}492}$

Answer: 5,721 R3

411. $\frac{431{,}174}{5}$

Answer: 86,234 R4

412. $\frac{297{,}277}{4}$

Answer: 74,319 R1

413. $130{,}016 \div 3$

Answer: 43,338 R2

414. $105{,}609 \div 2$

Answer: 52,804 R1

415. $15\overline{)5{,}735}$

Answer: 382 R5

416. $\frac{4{,}933}{21}$

Answer: 234 R19

417. $56{,}883 \div 67$

Answer: 849

418. $43{,}725 / 75$

Answer: 583

419. $\frac{30{,}144}{314}$

Answer: 96

420. $26{,}145 \div 415$

Answer: 63

421. $273\overline{)542{,}195}$

Answer: 1,986 R17

422. $816{,}243 \div 462$

Answer: 1,766 R351

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Mixed Practice For the following exercises, simplify.

423. $15(204)$
Answer: 3,060

424. $74 \bullet 391$
Answer: 28,934

425. $256-184$
Answer: 72

426. $305-262$
Answer: 43

427. $719+341$
Answer: 1,060

428. $647+528$
Answer: 1,175

429. $25\overline{)875}$
Answer: 35

430. $1104 \div 23$
Answer: 48

Translate Word Phrases to Algebraic Expressions For the following exercises, translate and simplify.

431. the quotient of 45 and 15
Answer: $45 \div 15$; 3

432. the quotient of 64 and 16
Answer: $64 \div 16$;4

433. the quotient of 288 and 24
Answer: $288 \div 24$;12

434. the quotient of 256 and 32
Answer: $256 \div 32$;8

Divide Whole Numbers in Applications For the following exercises, solve.

435. **Trail Mix.** Ric bought 64 ounces of trail mix. He wants to divide it into small bags, with 2 ounces of trail mix in each bag. How many bags can Ric fill?
Answer: Ric can fill 32 bags.

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436. **Crackers.** Evie bought a 42 ounce box of crackers. She wants to divide it into bags with 3 ounces of crackers in each bag. How many bags can Evie fill?
Answer: Evie can fill 14 bags.

437. **Astronomy Class.** There are 125 students in an astronomy class. The professor assigns them into groups of 5. How many groups of students are there?
Answer: There are 25 groups.

438. **Flower Shop.** Melissa's flower shop got a shipment of 152 roses. She wants to make bouquets of 8 roses each. How many bouquets can Melissa make?
Answer: Melissa can make 19 bouquets.

439. **Baking.** One roll of plastic wrap contains 48 feet of plastic wrap. Marta uses 3 feet of plastic wrap to wrap each cake she bakes. How many cakes can she wrap from one roll?
Answer: Marta can wrap 16 cakes from 1 roll.

440. **Dental floss** One package of dental floss contains 54 feet of dental floss. Brian uses 2 feet of dental floss every day. How many days will one package of dental floss last Brian?
Answer: One package will last Brian 27 days.

Mixed Practice in Applications For the following exercises, solve.

441. **Miles per gallon** Susana's hybrid car gets 45 miles per gallon. Her son's truck gets 17 miles per gallon. What is the difference in miles per gallon between Jane's car and her son's truck?
Answer: The difference is 28 miles per gallon.

442. **Distance.** Mayra lives 53 miles from her mother's house and 71 miles from her mother-in-law's house. How much farther is Mayra from her mother-in-law's house than from her mother's house?
Answer: Mayra's mother-in-law's house is 18 miles farther than her mother's house.

443. **Field Trip.** The 45 students in a Geology class will go on a field trip, using the college's vans. Each van can hold 9 students. How many vans will they need for the field trip?
Answer: They will need 5 vans for the field trip.

444. **Potting Soil.** Aki bought a 128 ounce bag of potting soil. How many 4 ounce pots can he fill from the bag?
Answer: Aki can fill 32 pots.

445. **Hiking.** Bill hiked 8 miles on the first day of his backpacking trip, 14 miles the second day, 11 miles the third day, and 17 miles the fourth day. What is the total number of miles Bill hiked?
Answer: Bill hiked 50 miles.

446. **Reading.** Last night Emily read 6 pages in her Business textbook, 26 pages in her History text, 15 pages in her Psychology text, and 9 pages in her math text. What is the total number of pages Emily read?
Answer: Emily read 56 pages.

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447. **Patients.** LaVonne treats 12 patients each day in her dental office. Last week she worked 4 days. How many patients did she treat last week?
Answer: LaVonne treated 48 patients last week.

448. **Scouts.** There are 14 boys in Dave's scout troup. At summer camp, each boy earned 5 merit badges. What was the total number of merit badges earned by Dave's scout troup at summer camp?
Answer: The troupe earned a total of 70 merit badges.

Writing Exercises

449. **Contact Lenses.** Jenna puts in a new pair of contact lenses every 14 days. How many pairs of contact lenses does she need for 365 days?
Answer: Jenna uses 26 pairs of contact lenses, but there is 1 day left over, so she needs 27 pairs for 365 days.

450. **Cat Food.** One bag of cat food feeds Lara's cat for 25 days. How many bags of cat food does Lara need for 365 days?
Answer: Lara uses 14 bags of cat food, but there are 15 days left over, so she needs 15 bags.

Everyday Math

451. Explain how you use the multiplication facts to help with division.
Answer: Answers may vary. Using multiplication facts can help you check your answers once you've finished division.

452. Oswaldo divided 300 by 8 and said his answer was '37, with a remainder of 4'. How can you check to make sure he is correct?
Answer: Answers may vary. Multiply 37 by 8 and add 4 to that product. If it matches 300 then he is correct.

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Chapter 1 Review

1.1 Introduction to Whole Numbers

Identify Counting Numbers and Whole Numbers For the following exercises, determine which of the following are (a) counting numbers (b) whole numbers.

453. 0, 2, 99

Answer: (a) 2, 99 (b) 0, 2, 99

454. 0, 3, 25

Answer: (a) 3, 25 (b) 0, 3, 25

455. 0, 4, 90

Answer: (a) 4, 90 (b) 0, 4, 90

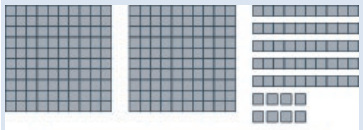
456. 0, 1, 75

Answer: (a) 1, 75 (b) 0, 1, 75

Model Whole Numbers For the following exercises, model each number using base-10 blocks and then show its value using place value notation.

457. 258

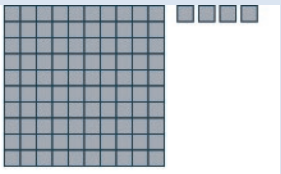
Answer:



Place Value	Digit	Total Value
hundreds	2	200
tens	5	50
ones	8	8
		258

458. 104

Answer:



Digit	Place Value	Number
1	hundreds	1 ×
0	tens	0 ×
4	ones	4 ×

Value	Total Value
100	100
10	0
1	4
	104

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Identify the Place Value of a Digit For the following exercises, find the place value of the given digits.

459. 472,981
(a) 8
(b) 4
(c) 1
(d) 7
(e) 2
Answer: (a) tens (b) hundred thousands (c) ones (d) ten thousands (e) thousands

460. 12,403,295
(a) 4
(b) 0
(c) 1
(d) 9
(e) 3
Answer: (a) hundred thousands (b) ten thousands (c) ten millions (d) tens (e) thousands

Use Place Value to Name Whole Numbers For the following exercises, name each number in words.

461. 5,280
Answer: Five thousand, two hundred eighty

462. 204,614
Answer: two hundred four thousand six hundred fourteen

463. 5,012,582
Answer: Five million, twelve thousand, five hundred eighty-two

464. 31,640,976
Answer: Thirty-one million six hundred forty thousand nine hundred seventy-six

Use Place Value to Write Whole Numbers For the following exercises, write as a whole number using digits.

465. six hundred two
Answer: 602

466. fifteen thousand, two hundred fifty-three
Answer: 15,253

467. three hundred forty million, nine hundred twelve thousand, sixty-one
Answer: 340,912,061

468. two billion, four hundred ninety-two million, seven hundred eleven thousand, two
Answer: 2,492, 711,002

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Round Whole Numbers For the following exercises, round to the nearest ten.

469. 412
Answer: 410

470. 648
Answer: 650

471. 3,556
Answer: 3,560

472. 2,734
Answer: 2,730

For the following exercises, round to the nearest hundred.

473. 38,975
Answer: 39,000

474. 26,849
Answer: 26,800

475. 81,486
Answer: 81,500

476. 75,992
Answer: 76,000

1.2 Add Whole Numbers

Use Addition Notation For the following exercises, translate the following from math notation to words.

477. $4+3$
Answer: four plus three; the sum of four and three

478. $25+18$
Answer: twenty-five plus eighteen; the sum of twenty-five and eighteen

479. $571+629$
Answer: five hundred seventy-one plus six hundred twenty-nine; the sum of five hundred seventy-one and six hundred twenty-nine

480. $10{,}085+3{,}492$
Answer: ten thousand eighty-five plus three thousand four hundred ninety-two; the sum of ten thousand eighty-five and three thousand four hundred ninety-two

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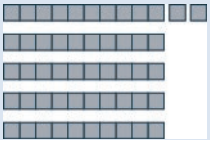
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Model Addition of Whole Numbers For the following exercises, model the addition.

481. $6+7$

Answer: 

482. $38+14$

Answer:


Add Whole Numbers For the following exercises, fill in the missing values in each chart.

483.

+	0	1	2	3	4	5	6	7	8	9
0	0	1		3	4		6	7		9
1	1	2	3	4			7	8	9	
2		3	4	5	6	7	8		10	11
3	3		5		7	8		10		12
4	4	5			8	9			12	
5	5		7	8			11		13	
6	6	7	8		10			13		15
7			9			12	13		15	16
8	8	9		11			14		16	
9	9	10	11		13	14			17	

Answer:

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13
5	5	6	7	8	9	10	11	12	13	14
6	6	7	8	9	10	11	12	13	14	15
7	7	8	9	10	11	12	13	14	15	16
8	8	9	10	11	12	13	14	15	16	17
9	9	10	11	12	13	14	15	16	17	18

484.

+	3	4	5	6	7	8	9
6							
7							
8							
9							

Answer:

+	3	4	5	6	7	8	9
6	9	10	11	12	13	14	15
7	10	11	12	13	14	15	16
8	11	12	13	14	15	16	17
9	12	13	14	15	16	17	18

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For the following exercises, add.

485. (a) $0+19$ (b) $19+0$
Answer: (a) 19 (b) 19

486. (a) $0+480$ (b) $480+0$
Answer: (a) 480 (b) 480

487. (a) $7+6$ (b) $6+7$
Answer: (a) 13 (b) 13
488. (a) $23+18$ (b) $18+23$
Answer: (a) 41 (b) 41

489. $44+35$
Answer: 79

490. $63+29$
Answer: 92

491. $96+58$
Answer: 154

492. $375+591$
Answer: 966

493. $7{,}281+12{,}546$
Answer: 19,827

494. $5{,}280+16{,}324+9{,}731$
Answer: 31,335

Translate Word Phrases to Math Notation For the following exercises, translate each phrase into math notation and then simplify.

495. the sum of 30 and 12
Answer: 30 + 12; 42

496. 11 increased by 8
Answer: 11 + 8; 19

497. 25 more than 39
Answer: 39 + 25; 64

498. total of 15 and 50
Answer: 15 + 50; 65

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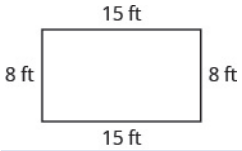
Add Whole Numbers in Applications For the following exercises, solve.

499. **Shopping for an interview** Nathan bought a new shirt, tie, and slacks to wear to a job interview. The shirt cost $24, the tie cost $14, and the slacks cost $38. What was Nathan's total cost?
Answer: $76

500. **Running** Jackson ran 4 miles on Monday, 12 miles on Tuesday, 1 mile on Wednesday, 8 miles on Thursday, and 5 miles on Friday. What was the total number of miles Jackson ran?
Answer: 30 miles

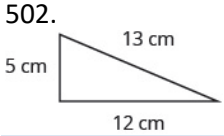
For the following exercises, find the perimeter of each figure.

501.



Answer: 46 feet

502.



Answer: 30 cm

1.3 Subtract Whole Numbers

Use Subtraction Notation For the following exercises, translate the following from math notation to words.

503. $14-5$
Answer: fourteen minus five; the difference of fourteen and five

504. $40-15$
Answer: forty minus fifteen; the difference between forty and fifteen

505. $351-249$
Answer: three hundred fifty-one minus two hundred forty-nine; the difference between three hundred fifty-one and two hundred forty-nine

506. $5{,}724-2{,}918$
Answer: five thousand seven hundred twenty-four minus two thousand nine hundred eighteen; the difference between five thousand seven hundred twenty-four and two thousand nine hundred eighteen

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Model Subtraction of Whole Numbers For the following exercises, model the subtraction**.**

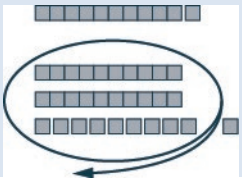
507. $18 - 4$

Answer:



508. $41 - 29$

Answer:



Subtract Whole Numbers For the following exercises, subtract and then check by adding.

509. $8 - 5$

Answer: 3

510. 12-7

Answer: 5

511. $23 - 9$

Answer: 14

512. $46 - 21$

Answer: 25

513. $82 - 59$

Answer: 23

514. $110 - 87$

Answer: 23

515. $539 - 217$

Answer: 322

516. $415 - 296$

Answer: 119

517. $1{,}020 - 640$

Answer: 380

518. $8{,}355 - 3{,}947$

Answer: 4,408

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519. $10,000 - 15$

Answer: 9,985

520. $54,925 - 35,647$

Answer: 19,278

Translate Word Phrases to Math Notation For the following exercises, translate and simplify.

521. the difference of nineteen and thirteen

Answer: 19 – 13; 6

522. subtract sixty-five from one hundred

Answer: 100 – 65; 35

523. seventy-four decreased by eight

Answer: 74 – 8; 66

524. twenty-three less than forty-one

Answer: 41 – 23; 18

Subtract Whole Numbers in Applications For the following exercises, solve.

525. **Temperature** The high temperature in Peoria one day was 86 degrees Fahrenheit and the low temperature was 28 degrees Fahrenheit. What was the difference between the high and low temperatures?

Answer: 58 degrees Fahrenheit

526. **Savings** Lynn wants to go on a cruise that costs $2485. She has $948 in her vacation savings account. How much more does she need to save in order to pay for the cruise?

Answer: $1,537

1.4 Multiply Whole Numbers

Use Multiplication Notation For the following exercises, translate from math notation to words.

527. 8×5

Answer: eight times five; the product of eight and five

528. $6 \cdot 14$

Answer: six times fourteen; the product of six and fourteen

529. $(10)(95)$

Answer: ten times ninety-five; the product of ten and ninety-five

530. $54(72)$

Answer: fifty-four times seventy-two; the product of fifty-four and seventy-two

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Model Multiplication of Whole Numbers For the following exercises, model the multiplication.

531. 2×4

Answer:



532. 3×8

Answer:



Multiply Whole Numbers For the following exercises, fill in the missing values in each chart.

533.

×	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0		0		0	0
1	0	1	2		4	5	6	7		9
2	0		4		8	10		14	16	
3		3		9			18		24	
4	0	4		12			24			36
5	0	5	10		20		30	35	40	45
6			12	18			36	42		54
7	0	7		21		35			56	63
8	0	8	16		32		48		64	
9			18	27	36			63	72	

Answer:

×	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	15	20	25	30	35	40	45
6	0	6	12	18	24	30	36	42	48	54
7	0	7	14	21	28	35	42	49	56	63
8	0	8	16	24	32	40	48	56	64	72
9	0	9	18	27	36	45	54	63	72	81

534.

×	3	4	5	6	7	8	9
6							
7							
8							
9							

Answer:

×	3	4	5	6	7	8	9
6	18	24	30	36	42	48	54
7	21	28	35	42	49	56	63
8	24	32	40	48	56	64	72
9	27	36	45	54	63	72	81

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For the following exercises, multiply.

535. $0 \cdot 14$

Answer: 0

536. $(256)0$

Answer: 0

537. $1 \cdot 99$

Answer: 99

538. $(4{,}789)1$

Answer: 4,789

539. (a) $7 \cdot 4$; (b) $4 \cdot 7$

Answer: (a) 28 (b) 28

540. $(25)(6)$

Answer: 150

541. $9{,}261 \times 3$

Answer: 27,783

542. $48 \cdot 76$

Answer: 3,648

543. $64 \cdot 10$

Answer: 640

544. $1{,}000(22)$

Answer: 22,000

545. 162×493

Answer: 79,866

546. $(601)(943)$

Answer: 566,743

547. $3{,}624 \times 517$

Answer: 1,873,608

548. $10{,}538 \cdot 22$

Answer: 231,836

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Translate Word Phrases to Math Notation For the following exercises, translate and simplify.

549. the product of 15 and 28
Answer: 15(28); 420

550. ninety-four times thirty-three
Answer: 94(33); 3,102

551. twice 575
Answer: 2(575); 1,150

552. ten times two hundred sixty-four
Answer: 10(264); 2,640

Multiply Whole Numbers in Applications For the following exercises, solve.

553. **Gardening** Geniece bought 8 packs of marigolds to plant in her yard. Each pack has 6 flowers. How many marigolds did Geniece buy?
Answer: She bought 48 marigolds.

554. **Cooking** Ratika is making rice for a dinner party. The number of cups of water is twice the number of cups of rice. If Ratika plans to use 4 cups of rice, how many cups of water does she need?
Answer: She needs 8 cups.

555. **Multiplex** There are twelve theaters at the multiplex and each theater has 150 seats. What is the total number of seats at the multiplex?
Answer: There are 1,800 seats.

556. **Roofing** Lewis needs to put new shingles on his roof. The roof is a rectangle, 30 feet by 24 feet. What is the area of the roof?
Answer: The area is 720 square feet.

1.5 Divide Whole Numbers

Use Division Notation Translate from math notation to English.

557. $54 \div 9$
Answer: fifty-four divided by nine; the quotient of fifty-four and nine

558. $42 / 7$
Answer: forty-two divided by seven; the quotient of forty-two and seven

559. $\frac{72}{8}$
Answer: seventy-two divided by eight; the quotient of seventy-two and eight

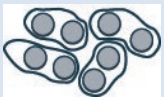
560. $6\overline{)48}$
Answer: forty-eight divided by six; the quotient of forty-eight and six

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Model Division of Whole Numbers For the following exercises, model.

561. $8 \div 2$

Answer:



562. $3\overline{)12}$

Answer:



Divide Whole Numbers For the following exercises, divide. Then check by multiplying.

563. $14 \div 2$

Answer: 7

564. $\frac{32}{8}$

Answer: 4

565. $52 \div 4$

Answer: 13

566. $26\overline{)26}$

Answer: 1

567. $\frac{97}{1}$

Answer: 97

568. $0 \div 52$

Answer: 0

569. $100 \div 0$

Answer: undefined

570. $\frac{355}{5}$

Answer: 71

571. $3828 \div 6$

Answer: 638

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572. $31\overline{)1{,}519}$

Answer: 49

573. $\frac{7505}{25}$

Answer: 300 R5

574. $5{,}166 \div 42$

Answer: 123

Translate Word Phrases to Math Notation For the following exercises, translate and simplify.

575. the quotient of 64 and 16

Answer: $64 \div 16$; 4

576. the quotient of 572 and 52

Answer: $572 \div 52$; 11

Divide Whole Numbers in Applications For the following exercises, solve.

577. **Ribbon** One spool of ribbon is 27 feet. Lizbeth uses 3 feet of ribbon for each gift basket that she wraps. How many gift baskets can Lizbeth wrap from one spool of ribbon?

Answer: 9 baskets

578. **Juice** One carton of fruit juice is 128 ounces. How many 4 ounce cups can Shayla fill from one carton of juice?

Answer: 32 cups

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Chapter 1 Practice Test

579. Determine which of the following numbers are
(a) counting numbers
(b) whole numbers.
0, 4, 87

Answer: (a) 4, 87 (b) 0, 4, 87

580. Find the place value of the given digits in the number 549,362.
(a) 9
(b) 6
(c) 2
(d) 5

Answer: (a) thousands (b) tens (c) ones (d) hundred thousands

581. Write each number as a whole number using digits.
(a) six hundred thirteen
(b) fifty-five thousand two hundred eight

Answer: (a) 613 (b) 55,208

582. Round 25,849 to the nearest hundred.

Answer: 25,800

Simplify.

583. $45+23$

Answer: 68

584. $65-42$

Answer: 23

585. $85\div5$

Answer: 17

586. 1000×8

Answer: 8,000

587. $90-58$

Answer: 32

588. $73+89$

Answer: 162

589. $(0)(12{,}675)$

Answer: 0

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590. $634+255$
Answer: 889

591. $\frac{0}{9}$
Answer: 0

592. $8\overline{)128}$
Answer: 16

593. $145-79$
Answer: 66

594. $299+836$
Answer: 1,135

595. $7 \cdot 475$
Answer: 3,325

596. $8{,}528+704$
Answer: 9,232

597. $35(14)$
Answer: 490

598. $\frac{26}{0}$
Answer: undefined

599. $733-291$
Answer: 442

600. $4{,}916-1{,}538$
Answer: 3,378

601. $495 \div 45$
Answer: 11

602. 52×983
Answer: 51,116

Translate each phrase to math notation and then simplify.

603. The sum of 16 and 58
Answer: 16 + 58; 74

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604. The product of 9 and 15
Answer: 9(15); 135

605. The difference of 32 and 18
Answer: 32 – 18; 14

606. The quotient of 63 and 21
Answer: 63 ÷ 21 = 3 or $\frac{63}{21} = 3$

607. Twice 524
Answer: 2(524); 1,048

608. 29 more than 32
Answer: 32 + 29; 61

609. 50 less than 300
Answer: 300 – 50; 250

Solve.

610. LaVelle buys a jumbo bag of 84 candies to make favor bags for her son's party. If she wants to make 12 bags, how many candies should she put in each bag?
Answer: LaVelle should put 7 candies in each bag.

611. Last month, Stan's take-home pay was $3816 and his expenses were $3472. How much of his take-home pay did Stan have left after he paid his expenses?
Answer: Stan had $344 left.

612. Each class at Greenville School has 22 children enrolled. The school has 24 classes. How many children are enrolled at Greenville School?
Answer: Greenville School has 528 students enrolled.

613. Clayton walked 12 blocks to his mother's house, 6 blocks to the gym, and 9 blocks to the grocery store before walking the last 3 blocks home. What was the total number of blocks that Clayton walked?
Answer: Clayton walked 30 blocks.

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