Name: _____ **Class:** _____ **Date:** _____ **ID: A**

MFCR SIA #1 Practice

Short Answer

What is an algebraic expression for the word phrase?

1. the sum of n and 9
2. the difference of r and 3
3. the product of g and 4
4. the quotient of j and 8
5. 3 times the sum of b and f
6. the quotient of 8 and the difference of x and m
7. 6 times the difference of b and p

What word phrase can you use to represent the algebraic expression?

8. $3m$
9. $5x + 2$

What is the simplified form of each expression?

10. $5(14-2)^2 \div 2$
11. $4(20 + 12) \div (4 - 3)$
12. Evaluate $u + xy$, for $u = 18$, $x = 10$, and $y = 8$.
13. Evaluate $\frac{u}{z} + xy^2$, for $u = 20$, $x = 4$, $y = 7$, and $z = 10$.
14. Evaluate $(ab)^2$ for $a = 4$ and $b = 3$.

What property is illustrated by each statement?

15. $8 + 3.4 = 3.4 + 8$
16. $7 + (4 + 4) = (7 + 4) + 4$

17. $2\left(-\frac{3}{9}\right) = \left(-\frac{3}{9}\right)2$

18. At the video store, you buy two CDs for $18.90 each and a DVD for $20.50. Use mental math to find the total cost of your purchases.

19. At the grocery store, you buy a carton of milk for $3.90 a loaf of bread for $1.95, and a bag of cookies for $3.05. Use mental math to find the total cost of the groceries.

What is each sum?

20. –7 + 5

21. –6 + (–3)

22. –6.1 + 1.7

23. $\frac{7}{3} + \left(-\frac{3}{8}\right)$

What is each difference?

24. $\frac{9}{4} - \frac{1}{7}$

25. –1.8 – 3.9

26. 8 – 8

27. A mountain climber ascends a mountain to its peak. The peak is 12,740 ft above sea level. The climber then descends 200 ft to meet a fellow climber. Find the climber's elevation above sea level after meeting the other climber.

28. You made two deposits to your bank account this month. One deposit was $17.92, and the second deposit was $15.33. Your balance at the end of the month is $72.31, and you made no withdrawals. Write and evaluate an expression for your balance at the beginning of the month.

What is each product?

29. 8(–1)

30. 4.3(–2.9)

31. $\frac{5}{10} \bullet \frac{10}{3}$

32. $(-6.8)^2$

What is the simplified form of each expression?

33. $\frac{1}{3}(21m + 27)$

34. $(4 - c)(-1)$

35. $(2 - 9c)(-8)$

36. $1.7m^2 + 6.5n - 4n + 2.5m^2 - n$

37. $2.5m^2 + 7.8n - 3.2n + 5.3m^2 - 5.9n$

What sum or difference is equivalent to the expression?

38. $\frac{3x + 2}{8}$

39. $\frac{3x - 2}{9}$

What is the simplified form of each expression?

40. $-(8d - 3w)$

41. $-\left(-10p + 4r\right)$

42. Magazines cost $1.95 each. What is the total cost of 9 magazines? Use mental math.

43. T-shirts cost $12.90 each. What is the total cost of 4 magazines? Use mental math.

What is the solution of the equation?

44. $16 = -d + 6$

45. $4.7x + 3.8 = 13.2$

46. $\frac{6}{7}x - 8 = 7$

47. Steven wants to buy a $565 bicycle. Steven has no money saved, but will be able to deposit $30 into a savings account when he receives his paycheck each Friday. However, before Steven can buy the bike, he must give his sister $65 that he owes her. For how many weeks will Steven need to deposit money into his savings account before he can pay back his sister and buy the bike?

48. Aimi is making Valentine's Day cards for everyone in her class. She plans to use a whole sheet of paper for each of her 5 closest friends. She will use $\frac{1}{2}$ of a sheet of paper for everyone else in the class. She has 15 sheets of paper. How many cards can she make?

49. Hannah wants to buy a $570 camera. She can save $50 each week from her paycheck. However, before Hannah can buy the camera, she must give her brother $80 that she owes him. For how many weeks will Hannah need to save before she can pay back her brother and buy the camera?

What is the solution of the equation?

50. $-2 = \dfrac{-5 + z}{-2}$

51. $\dfrac{b - 3}{-5} = -15$

52. Which property of equality justifies step f?

a. $26 = -16 - 8x$

b. $26 = -16 + (-8x)$

c. $26 + 16 = -16 + (-8x) + 16$

d. $26 + 16 = -16 + 16 + (-8x)$

e. $42 = -8x$

f. $\dfrac{42}{-8} = \dfrac{-8x}{-8}$

g. $-\dfrac{21}{4} = x$

What is the solution of the equation?

53. $2 = 6p - 8 - 5p$

54. $3x - 9 - 5x = -7$

55. $5d - d - 2d + 8 - 3d = 0$

56. John and 2 friends are going out for pizza for lunch. They split one pizza and 3 large drinks. The pizza cost $12.00. They spend a total of $16.95. Find the cost of one large drink.

57. Angela and Neil are going to the movies. They each bought a medium popcorn, and Neil got a small soft drink. Angela had a $5 gift certificate to put toward the cost, and Neil paid the rest, which came to $27.90. A movie ticket costs $10.00 and a medium popcorn costs $5.50. How much does a soft drink cost at the theater?

What is the solution of the equation?

58. $4(y + 2) = 32$

59. $3(y - 5) + 2 = 5$

60. $70 = -7(-2 - 2z)$

61. $\frac{3p}{5} + \frac{8}{5} = 1$

62. $\frac{4p}{6} + 27 = 39$

63. $2.4x + 2.6 = 17$

64. $5.8x - 1.4 = 16$

What is the solution of the equation?

65. $6x - 3 = 5x - 5$

66. $6 - t = 2t$

67. $-4x - 9 = -5 - 6x$

68. A camera manufacturer spends $2250 each day for overhead expenses plus $6 per camera for labor and materials. The cameras sell for $16 each. How many cameras must the company sell in one day to equal its daily costs? If the manufacturer can increase production by 50 cameras per day, what would their daily profit be?

What is the solution of the equation?

69. $5(10x - 10) = -5(-4x + 4)$

70. $-6p + 7 = 3(2p - 3) - 4(-10 + 4p)$

71. What equation do you get when you solve $a - q = a + sx$ for x?

72. What equation do you get when you solve $ky - bf = \frac{fy}{m}$ for y?

73. What is the radius of a circle with circumference 17 mm? Round to the nearest tenth. Use 3.14 for π.

74. What is the height of a triangle that has an area of 60 yd^2 and a base with a length of 12 yd?

75. At an automobile factory, 1849 parts are made in 4 hours. What is the average rate at which parts are made per hour?

76. A flock of Canadian geese migrated 1623 miles in 28 days. What was the average rate at which these geese traveled in miles per day?

77. The total cost to rent a row boat is $16 times the number of hours the boat is used. How long can you rent the boat for $224?

78. Car A travels 180 miles in 7 hours. Car B travels 350 miles in 4 hours. Car C travels 584 miles in 15 hours. Which car has the fastest average speed?

79. You are shopping for jeans. City Express sells 3 pairs of jeans for $61. Denim Planet sells 2 pairs of jeans for $73. New Threads sells 4 pairs of jeans for $110. Which store has the best deal?

80. Lenny runs a 100-meter course in 25 seconds. Gary runs a 450-meter course in 112.5 seconds. Bruford runs a 950-meter course in 237.5 seconds. Which athlete is the fastest? Round each speed to one decimal place.

What is the given amount converted to the given units?

81. 195 s; minutes

82. 86 cm; meters

83. 144 ft; inches

84. An office building is 111 ft high. About how tall is this in meters?

85. The distance between Lakeview and Sun Valley is 89 km. About how far is this in miles?

86. On a certain day 1 US dollar is equivalent in value to 90 Japanese yen. Lucy is going on a trip to Japan. She has $900 to spend. How many yen is this?

87. A car is driving at a speed of 45 mi/h. What is the speed of the car in feet per minute?

88. A pool is filled at a rate of 105 gal/min. What is the rate in mL per second?

89. A student ran the 100-m dash in 15.4 s. What was the student's speed in miles per hour?

What is the solution of the proportion?

90. $\frac{10}{8} = \frac{25}{x}$

91. $\frac{13}{y} = \frac{3}{8}$

What is the solution of the proportion?

92. $\frac{x-8}{5} = \frac{2}{4}$

93. A van travels 220 miles on 10 gallons of gas. Find how many gallons the van needs to travel 550 miles.

94. School guidelines require that there must be at least 2 chaperones for every 25 students going on a school trip. How many chaperones must there be for 80 students?

95. What is the actual distance from New Wilmington to Sharon through Mercer?

96. What is the actual distance from New Wilmington to Sharon through Volant?

97. A map has a scale of 1 cm : 18 km. Two cities are 2.7 cm apart on the map. To the nearest tenth of a kilometer, what is the actual distance corresponding to the map distance?

98. Two rectangles are similar. One has a length of 10 cm and a width of 8 cm, and the other has a width of 7 cm. Find the length of the second rectangle. Round to the nearest tenth if necessary.

99. A scale model of a city has scale of 1 cm : 2.5 km. Two buildings in the model are 1.7 cm apart. To the nearest tenth of a kilometer, what is the actual distance between the buildings in the city?

What are the solutions of the inequality? Graph the solutions.

100. $x - 3 \leq -12$

101. $y - 6 \leq 2$

102. $r - 5 > 4$

What are the solutions of the inequality? Graph the solutions.

103. $x + 7 \leq -8$

104. $b + 8 \leq 4$

105. $p + 4 > 1$

106. Suppose you had d dollars in your bank account. You spent \$12 but have at least \$51 left. How much money did you have initially? Write and solve an inequality that represents this situation.

107. Your class hopes to collect at least 325 cans of food for the annual food drive. There were 135 cans donated the first week and 89 more the second week.

Write an inequality that describes this situation. Let c represent the number of cans of food that must be collected by the end of the third week for your class to meet or surpass your goal. How many cans are needed to meet or surpass your goal?

What are the solutions of the inequality? Graph the solutions.

108. $\frac{x}{9} > 9$

109. $\frac{x}{5} \geq -2$

What are the solutions of the inequality? Graph and check the solutions.

110. $-\frac{x}{4} \leq 2$

111. The French Club is sponsoring a bake sale. If their goal is to raise at least \$140, how many pastries must they sell at \$3.50 each in order to meet that goal? Write and solve an inequality.

What are the solutions of the inequality? Graph the solutions.

112. $-4x \geq -12$

113. $-2m < -14$

What are the solutions of the inequality? Check the solutions.

114. $-\frac{2}{5}x - 9 < \frac{9}{10}$

115. $4x + 6 < -6$

What are the solutions of the inequality?

116. $2(b - 8) > 12$

117. $q + 12 - 2(q - 22) > 0$

What are the solutions of the inequality?

118. $12 + 10w \geq 8(w + 12)$

119. $8n - 14 \leq 13n + 6$

What compound inequality represents the phrase? Graph the solutions.

120. all real numbers that are greater than –8 and less than 8

121. all real numbers w that are less than –7 or greater than 14

What are the solutions of the compound inequality? Graph the solutions.

122. $-2 \leq 2x - 4 < 8$

123. $-2 < 4x - 10 < 6$

What are the solutions of the compound inequality? Graph the solutions.

124. $2x - 2 < -12$ or $2x + 3 > 7$

What is the simplified form of each expression?

125. $(-5.1)^0$

126. $-(10)^{-1}$

127. $(-2)^{-5}$

128. $3g^{-2}b^2$

129. $\dfrac{1}{c^{-5}}$

130. $\dfrac{3}{g^{-2}h^3}$

131. What is the value of $2x^{-2}y^{-2}$ for $x = 3$ and $y = -2$?

What is each number written in scientific notation?

132. 1,220,000,000

133. 0.0287

What is each number written in standard notation?

134. 5×10^{3}

135. 5.71×10^{-3}

What is each expression written using each base only once?

136. $4^{8} \cdot 4^{3}$

137. $(3.16)^{-5} \cdot (3.16)^{6}$

138. $(-4)^{-6} \cdot (-4)^{7}$

139. $9^{-8} \cdot 9^{-2} \cdot 9^{10}$

What is the simplified form of each expression?

140. $4c^{-1} \cdot 3c^{10}$

141. $(-2x^{8}) \cdot 3y^{9} \cdot 2x^{4}$

Find the simplified form of the expression. Give your answer in scientific notation.

142. $\left(8 \times 10^{7}\right)\left(7 \times 10^{4}\right)$

143. $\left(7 \times 10^{-4}\right)\left(9 \times 10^{-10}\right)$

144. $\left(3 \times 10^{6}\right)\left(8 \times 10^{-4}\right)$

145. Astronomers measure large distances in light-years. One light-year is the distance that light can travel in one year, or approximately 5.88×10^{12} miles. Suppose a star is 9.8×10^{1} light-years from Earth. In scientific notation, approximately how many miles is it?

146. Last year a large trucking company delivered 6.0×10^{5} tons of goods with an average value of $27,000 per ton. What was the total value of the goods delivered? Write the answer in scientific notation.

What is the simplified form of the expression?

147. $(m^7)^2$

148. $(k^{-2})^9$

149. $t^8\left(t^{10}\right)^0$

150. $\left(y^{-5}\right)^{-10} y^{10}$

What is the simplified form of each expression?

151. $(3q^2)^4$

152. $(6q^6)^{-4}$

153. $(-5a^3b^6)^3(a^4b^2)^7$

154. $(3c^2d^4)^3(2c^5d^8)^3$

155. Suppose a white dwarf star has a diameter of approximately 1.6692×10^4 km. Use the formula $4\pi r^2$ to find the approximate surface area of the star.

156. Suppose a spherical asteroid has a radius of approximately 9.0×10^2 m. Use the formula $\left(\frac{4}{3}\right)\pi r^3$ to find the approximate volume of the asteroid.

What is the simplified form of each expression?

157. $\frac{n^6}{n^2}$

158. $\frac{a^{-10}}{a^5}$

159. $\frac{c^8 d^{-12}}{c^{-4} d^{-8}}$

160. Scientists believe that there is an extremely massive black hole at the center of the Milky Way. How many times more massive than the Sun would a black hole with a mass of 7.36×10^{36} kg be? The mass of the Sun is approximately 1.99×10^{30} kg.

What is the simplified form of the expression?

161. $\left(\frac{3x}{2}\right)^4$

162. $\left(\frac{2}{5n^9}\right)^2$

163. $\left(\frac{m^2}{10j^5}\right)^2$

164. $\left(\frac{k^4}{8p^4}\right)^{-3}$

165. $\left(\frac{t^4}{10y^4}\right)^{-4}$

166. Suppose a population of 160 crickets doubles in size every month. The function $f(x) = 160 \cdot 2^x$ gives the population after x months. How many crickets will there be after 2 years?

167. Suppose an investment of \$2,300 doubles in value every decade. The function $f(x) = 2{,}300 \cdot 2^x$ gives the value of the investment after x decades. How much is the investment worth after 2 decades?

Name the property of real numbers illustrated by the equation.

168. $-2(x + 11) = -2x - 22$

169. $\pi + 10 = 10 + \pi$

Evaluate the expression for the given value of the variable(s).

170. $5a + 5b$; $a = -6$, $b = -5$

171. $\frac{4(3h - 6)}{1 + h}$; $h = -2$

172. $-x^2 - 4x - 4;\ x = -3$

Combine like terms. What is a simpler form of each expression?

173. $4c - 4d + 8c - 3d$

174. $-3(-4y + 3) + 7y$

What is the solution of the following one-step equation?

175. $x - 0.7 = -2$

Solve the equation.

176. $3y + 20 = 3 + 2y$

177. $0.125r - 0.0625 + 0.25r = 0.25 + r$

178. $-5y - 9 = -(y - 1)$

Use an algebraic equation to solve the problem.

179. A rectangle is 3 times as long as it is wide. The perimeter is 60 cm. Find the dimensions of the rectangle. Round to the nearest tenth if necessary.

180. The sides of a triangle are in the ratio 3 : 4 : 5. What is the length of each side if the perimeter of the triangle is 90 cm?

181. Two cars leave Denver at the same time and travel in opposite directions. One car travels 10 mi/h faster than the other car. The cars are 300 mi apart in 3 h. How fast is each car traveling?

Is the following *always*, *sometimes*, or *never* true?

182. $14 + 3x - 7 = 7x + 7 - 4x$

183. $8 + 6x - 10 = 10x + 11 - 4x$

Solve the equation or formula for the indicated variable.

184. $S = 5r^2t$, for t

185. $T = \dfrac{4U}{E}$, for U

What inequality represents the sentence?

186. 14 fewer than a number is at least –8

187. The product of a number and 12 is no more than 15.

Solve the inequality. Graph the solution set.

188. $2 + 2k \leq 8$

189. $2r - 9 \geq -6$

190. $26 + 6b \geq 2(3b + 4)$

Solve the problem by writing an inequality.

191. A club decides to sell T-shirts for $15 as a fund-raiser. It costs $20 plus $9 per T-shirt to make the T-shirts. Write and solve an equation to find how many T-shirts the club needs to make and sell in order to profit at least $150.

192. If the perimeter of a rectangular picture frame must be less than 200 in., and the width is 36 in., what must the height h of the frame be?

Is the inequality *sometimes*, *always*, or *never* true?

193. $-2(2x + 9) > -4x + 9$

194. $2(10x - 5) - 9x \leq 11x + 13$

Solve the compound inequality. Graph the solution.

195. $5x + 10 \geq 10$ and $7x - 7 \leq 14$

196. $4x - 5 < -17$ or $5x + 6 > 31$

197. $-2 \leq 2x - 4 < 4$

MFCR SIA #1 Practice
Answer Section

SHORT ANSWER

1. ANS:
$n + 9$

PTS: 1 DIF: L2 REF: 1-1 Variables and Expressions
OBJ: 1-1.1 To write algebraic expressions
TOP: 1-1 Problem 1 Writing Expressions With Addition and Subtraction
KEY: algebraic expression | variable DOK: DOK 1

2. ANS:
$r - 3$

PTS: 1 DIF: L2 REF: 1-1 Variables and Expressions
OBJ: 1-1.1 To write algebraic expressions
TOP: 1-1 Problem 1 Writing Expressions With Addition and Subtraction
KEY: algebraic expression | variable DOK: DOK 1

3. ANS:
$4g$

PTS: 1 DIF: L3 REF: 1-1 Variables and Expressions
OBJ: 1-1.1 To write algebraic expressions
TOP: 1-1 Problem 2 Writing Expressions With Multiplication and Division
KEY: algebraic expression | variable DOK: DOK 1

4. ANS:
$\frac{j}{8}$

PTS: 1 DIF: L3 REF: 1-1 Variables and Expressions
OBJ: 1-1.1 To write algebraic expressions
TOP: 1-1 Problem 2 Writing Expressions With Multiplication and Division
KEY: algebraic expression | variable DOK: DOK 1

5. ANS:
$3(b + f)$

PTS: 1 DIF: L3 REF: 1-1 Variables and Expressions
OBJ: 1-1.1 To write algebraic expressions
TOP: 1-1 Problem 3 Writing Expressions With Two Operations
KEY: algebraic expression | variable DOK: DOK 1

6. ANS:
$\frac{8}{x-m}$

PTS: 1 DIF: L3 REF: 1-1 Variables and Expressions
OBJ: 1-1.1 To write algebraic expressions
TOP: 1-1 Problem 3 Writing Expressions With Two Operations
KEY: algebraic expression | variable DOK: DOK 1

7. ANS:
$6(b - p)$

PTS: 1 DIF: L3 REF: 1-1 Variables and Expressions
OBJ: 1-1.1 To write algebraic expressions
TOP: 1-1 Problem 3 Writing Expressions With Two Operations
KEY: algebraic expression | variable DOK: DOK 1

8. ANS:
three times a number m

PTS: 1 DIF: L2 REF: 1-1 Variables and Expressions
OBJ: 1-1.1 To write algebraic expressions
TOP: 1-1 Problem 4 Using Words for an Expression
KEY: algebraic expression | variable | quantity DOK: DOK 1

9. ANS:
the sum of five times a number x and two

PTS: 1 DIF: L3 REF: 1-1 Variables and Expressions
OBJ: 1-1.1 To write algebraic expressions
TOP: 1-1 Problem 4 Using Words for an Expression
KEY: algebraic expression | variable | quantity DOK: DOK 1

10. ANS:
360

PTS: 1 DIF: L3 REF: 1-2 Order of Operations and Evaluating Expressions
OBJ: 1-2.2 To use the order of operations to evaluate expressions
TOP: 1-2 Problem 2 Simplifying a Numerical Expression
KEY: power | exponent | base | simplify | evaluate DOK: DOK 1

11. ANS:
128

PTS: 1 DIF: L3 REF: 1-2 Order of Operations and Evaluating Expressions
OBJ: 1-2.2 To use the order of operations to evaluate expressions
TOP: 1-2 Problem 2 Simplifying a Numerical Expression
KEY: power | exponent | base | simplify | evaluate DOK: DOK 1

12. ANS:
98

PTS: 1 DIF: L3 REF: 1-2 Order of Operations and Evaluating Expressions
OBJ: 1-2.2 To use the order of operations to evaluate expressions
TOP: 1-2 Problem 3 Evaluating Algebraic Expressions
KEY: power | exponent | base | simplify | evaluate DOK: DOK 1

13. ANS:
198

PTS: 1 DIF: L4 REF: 1-2 Order of Operations and Evaluating Expressions
OBJ: 1-2.2 To use the order of operations to evaluate expressions
TOP: 1-2 Problem 3 Evaluating Algebraic Expressions
KEY: power | exponent | base | simplify | evaluate DOK: DOK 1

14. ANS:
144

PTS: 1 DIF: L3 REF: 1-2 Order of Operations and Evaluating Expressions
OBJ: 1-2.2 To use the order of operations to evaluate expressions
TOP: 1-2 Problem 3 Evaluating Algebraic Expressions
KEY: power | exponent | base | simplify | evaluate DOK: DOK 1

15. ANS:
Commutative Property of Addition

PTS: 1 DIF: L3 REF: 1-4 Properties of Real Numbers
OBJ: 1-4.1 To identify and use properties of real numbers STA: MA.912.A.3.2
TOP: 1-4 Problem 1 Identifying Properties KEY: equivalent expressions
DOK: DOK 2

16. ANS:
Associative Property of Addition

PTS: 1 DIF: L3 REF: 1-4 Properties of Real Numbers
OBJ: 1-4.1 To identify and use properties of real numbers STA: MA.912.A.3.2
TOP: 1-4 Problem 1 Identifying Properties KEY: equivalent expressions
DOK: DOK 2

17. ANS:
Commutative Property of Multiplication

PTS: 1 DIF: L2 REF: 1-4 Properties of Real Numbers
OBJ: 1-4.1 To identify and use properties of real numbers STA: MA.912.A.3.2
TOP: 1-4 Problem 1 Identifying Properties KEY: equivalent expressions
DOK: DOK 2

18. ANS:
$58.30

PTS: 1 DIF: L3 REF: 1-4 Properties of Real Numbers
OBJ: 1-4.1 To identify and use properties of real numbers STA: MA.912.A.3.2
TOP: 1-4 Problem 2 Using Properties for Mental Calculations KEY: deductive reasoning
DOK: DOK 1

19. ANS:
$8.90

PTS: 1 DIF: L4 REF: 1-4 Properties of Real Numbers
OBJ: 1-4.1 To identify and use properties of real numbers STA: MA.912.A.3.2
TOP: 1-4 Problem 2 Using Properties for Mental Calculations KEY: deductive reasoning
DOK: DOK 1

20. ANS:
–2

PTS: 1 DIF: L2 REF: 1-5 Adding and Subtracting Real Numbers
OBJ: 1-5.1 To find sums and differences of real numbers
TOP: 1-5 Problem 2 Adding Real Numbers KEY: opposites | additive inverses
DOK: DOK 1

21. ANS:
–9

PTS: 1 DIF: L2 REF: 1-5 Adding and Subtracting Real Numbers
OBJ: 1-5.1 To find sums and differences of real numbers
TOP: 1-5 Problem 2 Adding Real Numbers KEY: opposites | additive inverses
DOK: DOK 1

22. ANS:
–4.4

PTS: 1 DIF: L3 REF: 1-5 Adding and Subtracting Real Numbers
OBJ: 1-5.1 To find sums and differences of real numbers
TOP: 1-5 Problem 2 Adding Real Numbers KEY: opposites | additive inverses
DOK: DOK 1

23. ANS:
$\frac{47}{24}$

PTS: 1 DIF: L4 REF: 1-5 Adding and Subtracting Real Numbers
OBJ: 1-5.1 To find sums and differences of real numbers
TOP: 1-5 Problem 2 Adding Real Numbers KEY: opposites | additive inverses
DOK: DOK 1

24. ANS:
$\frac{59}{28}$

PTS: 1 DIF: L4 REF: 1-5 Adding and Subtracting Real Numbers
OBJ: 1-5.1 To find sums and differences of real numbers
TOP: 1-5 Problem 3 Subtracting Real Numbers KEY: opposites | additive inverses
DOK: DOK 1

25. ANS:
–5.7

PTS: 1 DIF: L3 REF: 1-5 Adding and Subtracting Real Numbers
OBJ: 1-5.1 To find sums and differences of real numbers
TOP: 1-5 Problem 3 Subtracting Real Numbers KEY: opposites | additive inverses
DOK: DOK 1

26. ANS:
0

PTS: 1 DIF: L2 REF: 1-5 Adding and Subtracting Real Numbers
OBJ: 1-5.1 To find sums and differences of real numbers
TOP: 1-5 Problem 3 Subtracting Real Numbers KEY: opposites | additive inverses
DOK: DOK 1

27. ANS:
12,540 ft

PTS: 1 DIF: L3 REF: 1-5 Adding and Subtracting Real Numbers
OBJ: 1-5.1 To find sums and differences of real numbers
TOP: 1-5 Problem 4 Adding and Subtracting Real Numbers KEY: opposites | additive inverses
DOK: DOK 2

28. ANS:
$72.31 – $17.92 – $15.33; $39.06

PTS: 1 DIF: L4 REF: 1-5 Adding and Subtracting Real Numbers
OBJ: 1-5.1 To find sums and differences of real numbers
TOP: 1-5 Problem 4 Adding and Subtracting Real Numbers KEY: opposites | additive inverses
DOK: DOK 3

29. ANS:
–8

PTS: 1 DIF: L2 REF: 1-6 Multiplying and Dividing Real Numbers
OBJ: 1-6.1 To find products and quotients of real numbers STA: MA.912.A.3.2
TOP: 1-6 Problem 1 Multiplying Real Numbers KEY: multiplicative inverse | reciprocal
DOK: DOK 1

30. ANS:
–12.47

PTS: 1 DIF: L3 REF: 1-6 Multiplying and Dividing Real Numbers
OBJ: 1-6.1 To find products and quotients of real numbers STA: MA.912.A.3.2
TOP: 1-6 Problem 1 Multiplying Real Numbers KEY: multiplicative inverse | reciprocal
DOK: DOK 1

31. ANS:
$\frac{5}{3}$

PTS: 1 DIF: L3 REF: 1-6 Multiplying and Dividing Real Numbers
OBJ: 1-6.1 To find products and quotients of real numbers STA: MA.912.A.3.2
TOP: 1-6 Problem 1 Multiplying Real Numbers KEY: multiplicative inverse | reciprocal
DOK: DOK 1

32. ANS:
46.24

PTS: 1 DIF: L3 REF: 1-6 Multiplying and Dividing Real Numbers
OBJ: 1-6.1 To find products and quotients of real numbers STA: MA.912.A.3.2
TOP: 1-6 Problem 1 Multiplying Real Numbers KEY: multiplicative inverse | reciprocal
DOK: DOK 1

33. ANS:
$7m + 9$

PTS: 1 DIF: L3 REF: 1-7 The Distributive Property
OBJ: 1-7.1 To use the Distributive Property to simplify expressions
STA: MA.912.A.3.2 TOP: 1-7 Problem 1 Simplifying Expressions
KEY: Distributive Property | coefficient | term | like terms DOK: DOK 1

34. ANS:
$–4 + c$

PTS: 1 DIF: L3 REF: 1-7 The Distributive Property
OBJ: 1-7.1 To use the Distributive Property to simplify expressions
STA: MA.912.A.3.2 TOP: 1-7 Problem 1 Simplifying Expressions
KEY: Distributive Property | coefficient | term | like terms DOK: DOK 1

35. ANS:
$–16 + 72c$

PTS: 1 DIF: L3 REF: 1-7 The Distributive Property
OBJ: 1-7.1 To use the Distributive Property to simplify expressions
STA: MA.912.A.3.2 TOP: 1-7 Problem 1 Simplifying Expressions
KEY: Distributive Property | coefficient | term | like terms DOK: DOK 1

36. ANS:
$4.2m^2 + 1.5n$

PTS: 1 DIF: L3 REF: 1-7 The Distributive Property
OBJ: 1-7.1 To use the Distributive Property to simplify expressions
STA: MA.912.A.3.2 TOP: 1-7 Problem 5 Combining Like Terms
KEY: Distributive Property | coefficient | term | like terms DOK: DOK 1

37. ANS:
$7.8m^2 - 1.3n$

PTS: 1 DIF: L4 REF: 1-7 The Distributive Property
OBJ: 1-7.1 To use the Distributive Property to simplify expressions
STA: MA.912.A.3.2 TOP: 1-7 Problem 5 Combining Like Terms
KEY: Distributive Property | coefficient | term | like terms DOK: DOK 1

38. ANS:
$\frac{3}{8}x + \frac{1}{4}$

PTS: 1 DIF: L3 REF: 1-7 The Distributive Property
OBJ: 1-7.1 To use the Distributive Property to simplify expressions
STA: MA.912.A.3.2 TOP: 1-7 Problem 2 Rewriting Fraction Expressions
KEY: Distributive Property | coefficient | term | like terms DOK: DOK 1

39. ANS:
$\frac{1}{3}x - \frac{2}{9}$

PTS: 1 DIF: L3 REF: 1-7 The Distributive Property
OBJ: 1-7.1 To use the Distributive Property to simplify expressions
STA: MA.912.A.3.2 TOP: 1-7 Problem 2 Rewriting Fraction Expressions
KEY: Distributive Property | coefficient | term | like terms DOK: DOK 1

40. ANS:
$-8d + 3w$

PTS: 1 DIF: L2 REF: 1-7 The Distributive Property
OBJ: 1-7.1 To use the Distributive Property to simplify expressions
STA: MA.912.A.3.2 TOP: 1-7 Problem 3 Using the Multiplication Property of -1
KEY: Distributive Property | coefficient | term | like terms DOK: DOK 1

41. ANS:
$10p - 4r$

PTS: 1 DIF: L3 REF: 1-7 The Distributive Property
OBJ: 1-7.1 To use the Distributive Property to simplify expressions
STA: MA.912.A.3.2 TOP: 1-7 Problem 3 Using the Multiplication Property of -1
KEY: Distributive Property | coefficient | term | like terms DOK: DOK 1

42. ANS:
$17.55

PTS: 1 DIF: L3 REF: 1-7 The Distributive Property
OBJ: 1-7.1 To use the Distributive Property to simplify expressions
STA: MA.912.A.3.2
TOP: 1-7 Problem 4 Using the Distributive Property for Mental Math
KEY: Distributive Property | coefficient | term | like terms DOK: DOK 1

43. ANS:
$51.60

PTS: 1 DIF: L3 REF: 1-7 The Distributive Property
OBJ: 1-7.1 To use the Distributive Property to simplify expressions
STA: MA.912.A.3.2
TOP: 1-7 Problem 4 Using the Distributive Property for Mental Math
KEY: Distributive Property | coefficient | term | like terms DOK: DOK 1

44. ANS:
–10

PTS: 1 DIF: L2 REF: 2-2 Solving Two-Step Equations
OBJ: 2-2.1 To solve two-step equations in one variable STA: MA.912.A.3.1
TOP: 2-2 Problem 1 Solving a Two-Step Equation DOK: DOK 1

45. ANS:
2

PTS: 1 DIF: L3 REF: 2-2 Solving Two-Step Equations
OBJ: 2-2.1 To solve two-step equations in one variable STA: MA.912.A.3.1
TOP: 2-2 Problem 1 Solving a Two-Step Equation DOK: DOK 1

46. ANS:
$17\frac{1}{2}$

PTS: 1 DIF: L3 REF: 2-2 Solving Two-Step Equations
OBJ: 2-2.1 To solve two-step equations in one variable STA: MA.912.A.3.1
TOP: 2-2 Problem 1 Solving a Two-Step Equation DOK: DOK 1

47. ANS:
21 weeks

PTS: 1 DIF: L3 REF: 2-2 Solving Two-Step Equations
OBJ: 2-2.1 To solve two-step equations in one variable STA: MA.912.A.3.1
TOP: 2-2 Problem 2 Using an Equation as a Model DOK: DOK 2

48. ANS:
20 cards

PTS: 1 DIF: L4 REF: 2-2 Solving Two-Step Equations
OBJ: 2-2.1 To solve two-step equations in one variable STA: MA.912.A.3.1
TOP: 2-2 Problem 2 Using an Equation as a Model DOK: DOK 2

49. ANS:
13 weeks

PTS: 1 DIF: L4 REF: 2-2 Solving Two-Step Equations
OBJ: 2-2.1 To solve two-step equations in one variable STA: MA.912.A.3.1
TOP: 2-2 Problem 2 Using an Equation as a Model DOK: DOK 2

50. ANS:
9

PTS: 1 DIF: L3 REF: 2-2 Solving Two-Step Equations
OBJ: 2-2.1 To solve two-step equations in one variable STA: MA.912.A.3.1
TOP: 2-2 Problem 3 Solving With Two Terms in the Numerator
DOK: DOK 1

51. ANS:
78

PTS: 1 DIF: L3 REF: 2-2 Solving Two-Step Equations
OBJ: 2-2.1 To solve two-step equations in one variable STA: MA.912.A.3.1
TOP: 2-2 Problem 3 Solving With Two Terms in the Numerator
DOK: DOK 1

52. ANS:
Division Property of Equality

PTS: 1 DIF: L3 REF: 2-2 Solving Two-Step Equations
OBJ: 2-2.1 To solve two-step equations in one variable STA: MA.912.A.3.1
TOP: 2-2 Problem 4 Using Deductive Reasoning DOK: DOK 2

53. ANS:
10

PTS: 1 DIF: L3 REF: 2-3 Solving Multi-Step Equations
OBJ: 2-3.1 To solve multi-step equations in one variable STA: MA.912.A.3.1| MA.912.A.3.5
TOP: 2-3 Problem 1 Combining Like Terms DOK: DOK 1

54. ANS:
–1

PTS: 1 DIF: L3 REF: 2-3 Solving Multi-Step Equations
OBJ: 2-3.1 To solve multi-step equations in one variable STA: MA.912.A.3.1| MA.912.A.3.5
TOP: 2-3 Problem 1 Combining Like Terms DOK: DOK 1

55. ANS:
8

PTS: 1 DIF: L4 REF: 2-3 Solving Multi-Step Equations
OBJ: 2-3.1 To solve multi-step equations in one variable STA: MA.912.A.3.1| MA.912.A.3.5
TOP: 2-3 Problem 1 Combining Like Terms DOK: DOK 1

56. ANS:
$1.65

PTS: 1 DIF: L3 REF: 2-3 Solving Multi-Step Equations
OBJ: 2-3.1 To solve multi-step equations in one variable STA: MA.912.A.3.1| MA.912.A.3.5
TOP: 2-3 Problem 2 Solving a Multi-Step Equation DOK: DOK 2

57. ANS:
$1.90

PTS: 1 DIF: L3 REF: 2-3 Solving Multi-Step Equations
OBJ: 2-3.1 To solve multi-step equations in one variable STA: MA.912.A.3.1| MA.912.A.3.5
TOP: 2-3 Problem 2 Solving a Multi-Step Equation DOK: DOK 2

58. ANS:
6

PTS: 1 DIF: L2 REF: 2-3 Solving Multi-Step Equations
OBJ: 2-3.1 To solve multi-step equations in one variable STA: MA.912.A.3.1| MA.912.A.3.5
TOP: 2-3 Problem 3 Solving an Equation Using the Distributive Property
DOK: DOK 1

59. ANS:
6

PTS: 1 DIF: L3 REF: 2-3 Solving Multi-Step Equations
OBJ: 2-3.1 To solve multi-step equations in one variable STA: MA.912.A.3.1| MA.912.A.3.5
TOP: 2-3 Problem 3 Solving an Equation Using the Distributive Property
DOK: DOK 1

60. ANS:
4

PTS: 1 DIF: L3 REF: 2-3 Solving Multi-Step Equations
OBJ: 2-3.1 To solve multi-step equations in one variable STA: MA.912.A.3.1| MA.912.A.3.5
TOP: 2-3 Problem 3 Solving an Equation Using the Distributive Property
DOK: DOK 1

61. ANS:
–1

PTS: 1 DIF: L3 REF: 2-3 Solving Multi-Step Equations
OBJ: 2-3.1 To solve multi-step equations in one variable STA: MA.912.A.3.1| MA.912.A.3.5
TOP: 2-3 Problem 4 Solving an Equation that Contains Fractions
DOK: DOK 1

62. ANS:
18

PTS: 1 DIF: L3 REF: 2-3 Solving Multi-Step Equations
OBJ: 2-3.1 To solve multi-step equations in one variable STA: MA.912.A.3.1| MA.912.A.3.5
TOP: 2-3 Problem 4 Solving an Equation that Contains Fractions
DOK: DOK 1

63. ANS:
6

PTS: 1 DIF: L3 REF: 2-3 Solving Multi-Step Equations
OBJ: 2-3.1 To solve multi-step equations in one variable STA: MA.912.A.3.1| MA.912.A.3.5
TOP: 2-3 Problem 5 Solving an Equation that Contains Decimals
DOK: DOK 1

64. ANS:
3

PTS: 1 DIF: L3 REF: 2-3 Solving Multi-Step Equations
OBJ: 2-3.1 To solve multi-step equations in one variable STA: MA.912.A.3.1| MA.912.A.3.5
TOP: 2-3 Problem 5 Solving an Equation that Contains Decimals
DOK: DOK 1

65. ANS:
–2

PTS: 1 DIF: L3 REF: 2-4 Solving Equations With Variables on Both Sides
OBJ: 2-4.1 To solve equations with variables on both sides
STA: MA.912.A.3.1| MA.912.A.3.2| MA.912.A.10.3
TOP: 2-4 Problem 1 Solving an Equation With Variables on Both Sides
DOK: DOK 1

66. ANS:
2

PTS: 1 DIF: L3 REF: 2-4 Solving Equations With Variables on Both Sides
OBJ: 2-4.1 To solve equations with variables on both sides
STA: MA.912.A.3.1| MA.912.A.3.2| MA.912.A.10.3
TOP: 2-4 Problem 1 Solving an Equation With Variables on Both Sides
DOK: DOK 1

67. ANS:
2

PTS: 1 DIF: L3 REF: 2-4 Solving Equations With Variables on Both Sides
OBJ: 2-4.1 To solve equations with variables on both sides
STA: MA.912.A.3.1| MA.912.A.3.2| MA.912.A.10.3
TOP: 2-4 Problem 1 Solving an Equation With Variables on Both Sides
DOK: DOK 1

68. ANS:
The company must sell 225 cameras to equal its daily costs; $500

PTS: 1 DIF: L3 REF: 2-4 Solving Equations With Variables on Both Sides
OBJ: 2-4.1 To solve equations with variables on both sides
STA: MA.912.A.3.1| MA.912.A.3.2| MA.912.A.10.3
TOP: 2-4 Problem 2 Using an Equation With Variables on Both Sides
DOK: DOK 2

69. ANS:
1

PTS: 1 DIF: L3 REF: 2-4 Solving Equations With Variables on Both Sides
OBJ: 2-4.1 To solve equations with variables on both sides
STA: MA.912.A.3.1| MA.912.A.3.2| MA.912.A.10.3
TOP: 2-4 Problem 3 Solving an Equation With Grouping Symbols
DOK: DOK 1

70. ANS:
$p = 6$

PTS: 1 DIF: L3 REF: 2-4 Solving Equations With Variables on Both Sides
OBJ: 2-4.1 To solve equations with variables on both sides
STA: MA.912.A.3.1| MA.912.A.3.2| MA.912.A.10.3
TOP: 2-4 Problem 3 Solving an Equation With Grouping Symbols
DOK: DOK 1

71. ANS:
$x = -\frac{q}{s}$

PTS: 1 DIF: L3 REF: 2-5 Literal Equations and Formulas
OBJ: 2-5.1 To rewrite and use literal equations and formulas STA: MA.912.A.3.3
TOP: 2-5 Problem 2 Rewriting a Literal Equation With Only Variables
KEY: literal equation DOK: DOK 2

72. ANS:
$y = \frac{bfm}{km - f}$

PTS: 1 DIF: L4 REF: 2-5 Literal Equations and Formulas
OBJ: 2-5.1 To rewrite and use literal equations and formulas STA: MA.912.A.3.3
TOP: 2-5 Problem 2 Rewriting a Literal Equation With Only Variables
KEY: literal equation DOK: DOK 2

73. ANS:
2.7 mm

PTS: 1 DIF: L3 REF: 2-5 Literal Equations and Formulas
OBJ: 2-5.1 To rewrite and use literal equations and formulas STA: MA.912.A.3.3
TOP: 2-5 Problem 3 Rewriting a Geometric Formula KEY: literal equation | formula
DOK: DOK 2

74. ANS:
10 yd

PTS: 1 DIF: L3 REF: 2-5 Literal Equations and Formulas
OBJ: 2-5.1 To rewrite and use literal equations and formulas STA: MA.912.A.3.3
TOP: 2-5 Problem 3 Rewriting a Geometric Formula KEY: literal equation | formula
DOK: DOK 2

75. ANS:
462 parts/h

PTS: 1 DIF: L3 REF: 2-5 Literal Equations and Formulas
OBJ: 2-5.1 To rewrite and use literal equations and formulas STA: MA.912.A.3.3
TOP: 2-5 Problem 4 Rewriting a Formula KEY: literal equation | formula
DOK: DOK 2

76. ANS:
58 miles per day

PTS: 1 DIF: L3 REF: 2-5 Literal Equations and Formulas
OBJ: 2-5.1 To rewrite and use literal equations and formulas STA: MA.912.A.3.3
TOP: 2-5 Problem 4 Rewriting a Formula KEY: literal equation | formula
DOK: DOK 2

77. ANS:
14 hours

PTS: 1 DIF: L3 REF: 2-5 Literal Equations and Formulas
OBJ: 2-5.1 To rewrite and use literal equations and formulas STA: MA.912.A.3.3
TOP: 2-5 Problem 4 Rewriting a Formula KEY: literal equation | formula
DOK: DOK 2

78. ANS:
Car B

PTS: 1 DIF: L3 REF: 2-6 Ratios, Rates, and Conversions
OBJ: 2-6.1 To find ratios and rates TOP: 2-6 Problem 1 Comparing Unit Rates
KEY: ratio | unit rate | rate DOK: DOK 2

79. ANS:
City Express

PTS: 1 DIF: L3 REF: 2-6 Ratios, Rates, and Conversions
OBJ: 2-6.1 To find ratios and rates TOP: 2-6 Problem 1 Comparing Unit Rates
KEY: ratio | rate | unit rate DOK: DOK 2

80. ANS:
They each travel at the same average speed.

PTS: 1 DIF: L3 REF: 2-6 Ratios, Rates, and Conversions
OBJ: 2-6.1 To find ratios and rates TOP: 2-6 Problem 1 Comparing Unit Rates
KEY: ratio | rate | unit rate DOK: DOK 2

81. ANS:
3.25 min

PTS: 1 DIF: L3 REF: 2-6 Ratios, Rates, and Conversions
OBJ: 2-6.2 To convert units and rates TOP: 2-6 Problem 2 Converting Units
KEY: conversion factor | unit analysis DOK: DOK 1

82. ANS:
0.86 m

PTS: 1 DIF: L3 REF: 2-6 Ratios, Rates, and Conversions
OBJ: 2-6.2 To convert units and rates TOP: 2-6 Problem 2 Converting Units
KEY: conversion factor | unit analysis DOK: DOK 1

83. ANS:
1728 in.

PTS: 1 DIF: L3 REF: 2-6 Ratios, Rates, and Conversions
OBJ: 2-6.2 To convert units and rates TOP: 2-6 Problem 2 Converting Units
KEY: conversion factor | unit analysis DOK: DOK 1

84. ANS:
33.84 m

PTS: 1 DIF: L3 REF: 2-6 Ratios, Rates, and Conversions
OBJ: 2-6.2 To convert units and rates TOP: 2-6 Problem 3 Converting Units Between Systems
KEY: conversion factor | unit analysis DOK: DOK 1

85. ANS:
55.31 mi

PTS: 1 DIF: L3 REF: 2-6 Ratios, Rates, and Conversions
OBJ: 2-6.2 To convert units and rates TOP: 2-6 Problem 3 Converting Units Between Systems
KEY: conversion factor | unit analysis DOK: DOK 1

86. ANS:
81000 yen

PTS: 1 DIF: L3 REF: 2-6 Ratios, Rates, and Conversions
OBJ: 2-6.2 To convert units and rates TOP: 2-6 Problem 3 Converting Units Between Systems
KEY: conversion factor | unit analysis DOK: DOK 2

87. ANS:
3,960 ft/min

PTS: 1 DIF: L3 REF: 2-6 Ratios, Rates, and Conversions
OBJ: 2-6.2 To convert units and rates TOP: 2-6 Problem 4 Converting Rates
KEY: conversion factor | unit analysis DOK: DOK 1

88. ANS:
6624.45 mL/s

PTS: 1 DIF: L3 REF: 2-6 Ratios, Rates, and Conversions
OBJ: 2-6.2 To convert units and rates TOP: 2-6 Problem 4 Converting Rates
KEY: conversion factor | unit analysis DOK: DOK 1

89. ANS:
14.5 mi/h

PTS: 1 DIF: L3 REF: 2-6 Ratios, Rates, and Conversions
OBJ: 2-6.2 To convert units and rates TOP: 2-6 Problem 4 Converting Rates
KEY: conversion factor | unit analysis DOK: DOK 1

90. ANS:
20

PTS: 1 DIF: L2 REF: 2-7 Solving Proportions
OBJ: 2-7.1 To solve and apply proportions STA: MA.912.A.5.4
TOP: 2-7 Problem 2 Solving a Proportion Using the Cross Products Property
KEY: proportion | cross products | Cross Products Property DOK: DOK 1

91. ANS:
34.7

PTS: 1 DIF: L3 REF: 2-7 Solving Proportions
OBJ: 2-7.1 To solve and apply proportions STA: MA.912.A.5.4
TOP: 2-7 Problem 2 Solving a Proportion Using the Cross Products Property
KEY: proportion | cross products | Cross Products Property DOK: DOK 1

92. ANS:
$\frac{21}{2}$

PTS: 1 DIF: L2 REF: 2-7 Solving Proportions
OBJ: 2-7.1 To solve and apply proportions STA: MA.912.A.5.4
TOP: 2-7 Problem 3 Solving a Multi-Step Proportion
KEY: proportion | cross products | Cross Products Property DOK: DOK 1

93. ANS:
25 gallons of gas

PTS: 1 DIF: L2 REF: 2-7 Solving Proportions
OBJ: 2-7.1 To solve and apply proportions STA: MA.912.A.5.4
TOP: 2-7 Problem 4 Using a Proportion to Solve a Problem
KEY: proportion | cross products | Cross Products Property DOK: DOK 2

94. ANS:
7 chaperones

PTS: 1 DIF: L3 REF: 2-7 Solving Proportions
OBJ: 2-7.1 To solve and apply proportions STA: MA.912.A.5.4
TOP: 2-7 Problem 4 Using a Proportion to Solve a Problem
KEY: proportion | cross products | Cross Products Property DOK: DOK 2

95. ANS:
39 mi

PTS: 1 DIF: L3 REF: 2-8 Proportions and Similar Figures
OBJ: 2-8.2 To use similar figures when measuring indirectly STA: MA.912.A.5.4
TOP: 2-8 Problem 3 Interpreting Scale Drawings
KEY: similar figures | scale drawing | scale DOK: DOK 3

96. ANS:
48 mi

PTS: 1 DIF: L3 REF: 2-8 Proportions and Similar Figures
OBJ: 2-8.2 To use similar figures when measuring indirectly STA: MA.912.A.5.4
TOP: 2-8 Problem 3 Interpreting Scale Drawings
KEY: similar figures | scale drawing | scale DOK: DOK 3

97. ANS:
48.6 km

PTS: 1 DIF: L3 REF: 2-8 Proportions and Similar Figures
OBJ: 2-8.2 To use similar figures when measuring indirectly STA: MA.912.A.5.4
TOP: 2-8 Problem 3 Interpreting Scale Drawings
KEY: similar figures | scale | scale drawing DOK: DOK 2

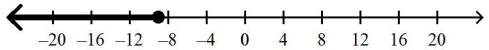
98. ANS:
8.8 cm

PTS: 1 DIF: L3 REF: 2-8 Proportions and Similar Figures
OBJ: 2-8.2 To use similar figures when measuring indirectly STA: MA.912.A.5.4
TOP: 2-8 Problem 4 Using Scale Models KEY: similar figures | scale | scale drawing
DOK: DOK 2

99. ANS:
4.3 km

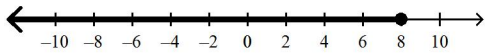
PTS: 1 DIF: L3 REF: 2-8 Proportions and Similar Figures
OBJ: 2-8.2 To use similar figures when measuring indirectly STA: MA.912.A.5.4
TOP: 2-8 Problem 4 Using Scale Models KEY: similar figures | scale | scale model
DOK: DOK 2

100. ANS:
$x \leq -9$



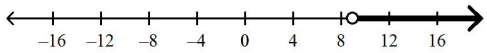
PTS: 1 DIF: L3 REF: 3-2 Solving Inequalities Using Addition or Subtraction
OBJ: 3-2.1 To use addition or subtraction to solve inequalities STA: MA.912.A.3.4
TOP: 3-2 Problem 1 Using the Addition Property of Inequality KEY: equivalent inequalities
DOK: DOK 1

101. ANS:
$y \leq 8$



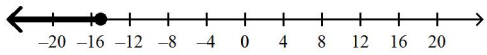
PTS: 1 DIF: L3 REF: 3-2 Solving Inequalities Using Addition or Subtraction
OBJ: 3-2.1 To use addition or subtraction to solve inequalities STA: MA.912.A.3.4
TOP: 3-2 Problem 1 Using the Addition Property of Inequality KEY: equivalent inequalities
DOK: DOK 1

102. ANS:
$r > 9$



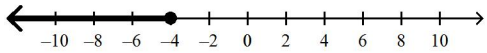
PTS: 1 DIF: L3 REF: 3-2 Solving Inequalities Using Addition or Subtraction
OBJ: 3-2.1 To use addition or subtraction to solve inequalities STA: MA.912.A.3.4
TOP: 3-2 Problem 1 Using the Addition Property of Inequality KEY: equivalent inequalities
DOK: DOK 1

103. ANS:
$x \leq -15$



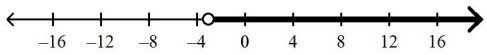
PTS: 1 DIF: L3 REF: 3-2 Solving Inequalities Using Addition or Subtraction
OBJ: 3-2.1 To use addition or subtraction to solve inequalities STA: MA.912.A.3.4
TOP: 3-2 Problem 3 Using the Subtraction Property of Inequality
KEY: equivalent inequalities DOK: DOK 1

104. ANS:
$b \leq -4$



PTS: 1 DIF: L3 REF: 3-2 Solving Inequalities Using Addition or Subtraction
OBJ: 3-2.1 To use addition or subtraction to solve inequalities STA: MA.912.A.3.4
TOP: 3-2 Problem 3 Using the Subtraction Property of Inequality
KEY: equivalent inequalities DOK: DOK 1

105. ANS:
$p > -3$



PTS: 1 DIF: L3 REF: 3-2 Solving Inequalities Using Addition or Subtraction
OBJ: 3-2.1 To use addition or subtraction to solve inequalities STA: MA.912.A.3.4
TOP: 3-2 Problem 3 Using the Subtraction Property of Inequality
KEY: equivalent inequalities DOK: DOK 1

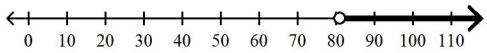
106. ANS:
$d - 12 \geq 51$; $d \geq 63$

PTS: 1 DIF: L3 REF: 3-2 Solving Inequalities Using Addition or Subtraction
OBJ: 3-2.1 To use addition or subtraction to solve inequalities STA: MA.912.A.3.4
TOP: 3-2 Problem 4 Writing and Solving an Inequality KEY: equivalent inequalities
DOK: DOK 2

107. ANS:
$135 + 89 + c \geq 325$; $c \geq 101$

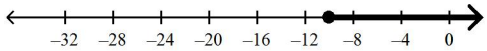
PTS: 1 DIF: L3 REF: 3-2 Solving Inequalities Using Addition or Subtraction
OBJ: 3-2.1 To use addition or subtraction to solve inequalities STA: MA.912.A.3.4
TOP: 3-2 Problem 4 Writing and Solving an Inequality KEY: equivalent inequalities
DOK: DOK 2

108. ANS:
$x > 81$



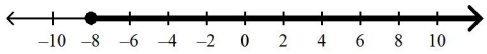
PTS: 1 DIF: L3 REF: 3-3 Solving Inequalities Using Multiplication or Division
OBJ: 3-3.1 To use multiplication or division to solve inequalities
STA: MA.912.A.3.4| MA.912.A.10.3 TOP: 3-3 Problem 1 Multiplying by a Positive Number
DOK: DOK 1

109. ANS:
$x \geq -10$



PTS: 1 DIF: L3 REF: 3-3 Solving Inequalities Using Multiplication or Division
OBJ: 3-3.1 To use multiplication or division to solve inequalities
STA: MA.912.A.3.4| MA.912.A.10.3 TOP: 3-3 Problem 1 Multiplying by a Positive Number
DOK: DOK 1

110. ANS:
$x \geq -8$

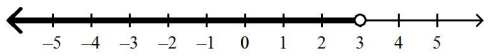


PTS: 1 DIF: L3 REF: 3-3 Solving Inequalities Using Multiplication or Division
OBJ: 3-3.1 To use multiplication or division to solve inequalities
STA: MA.912.A.3.4| MA.912.A.10.3 TOP: 3-3 Problem 2 Multiplying by a Negative Number
DOK: DOK 1

111. ANS:
$3.50p \geq 140;\ p \geq 40$

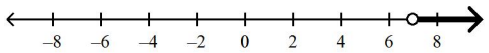
PTS: 1 DIF: L3 REF: 3-3 Solving Inequalities Using Multiplication or Division
OBJ: 3-3.1 To use multiplication or division to solve inequalities
STA: MA.912.A.3.4| MA.912.A.10.3 TOP: 3-3 Problem 3 Dividing by a Positive Number
DOK: DOK 2

112. ANS:
$x \leq 3$



PTS: 1 DIF: L3 REF: 3-3 Solving Inequalities Using Multiplication or Division
OBJ: 3-3.1 To use multiplication or division to solve inequalities
STA: MA.912.A.3.4| MA.912.A.10.3 TOP: 3-3 Problem 4 Dividing by a Negative Number
DOK: DOK 1

113. ANS:
$m > 7$



PTS: 1 DIF: L3 REF: 3-3 Solving Inequalities Using Multiplication or Division
OBJ: 3-3.1 To use multiplication or division to solve inequalities
STA: MA.912.A.3.4| MA.912.A.10.3 TOP: 3-3 Problem 4 Dividing by a Negative Number
DOK: DOK 1

114. ANS:
$x > -24\frac{3}{4}$

PTS: 1 DIF: L4 REF: 3-4 Solving Multi-Step Inequalities
OBJ: 3-4.1 To solve multi-step inequalities STA: MA.912.A.3.4| MA.912.A.3.5
TOP: 3-4 Problem 1 Using More Than One Step DOK: DOK 1

115. ANS:
$x < -3$

PTS: 1 DIF: L3 REF: 3-4 Solving Multi-Step Inequalities
OBJ: 3-4.1 To solve multi-step inequalities STA: MA.912.A.3.4| MA.912.A.3.5
TOP: 3-4 Problem 1 Using More Than One Step DOK: DOK 1

116. ANS:
$b > 14$

PTS: 1 DIF: L2 REF: 3-4 Solving Multi-Step Inequalities
OBJ: 3-4.1 To solve multi-step inequalities STA: MA.912.A.3.4| MA.912.A.3.5
TOP: 3-4 Problem 3 Using the Distributive Property DOK: DOK 1

117. ANS:
$q < 56$

PTS: 1 DIF: L3 REF: 3-4 Solving Multi-Step Inequalities
OBJ: 3-4.1 To solve multi-step inequalities STA: MA.912.A.3.4| MA.912.A.3.5
TOP: 3-4 Problem 3 Using the Distributive Property DOK: DOK 1

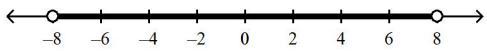
118. ANS:
$w \geq 42$

PTS: 1 DIF: L3 REF: 3-4 Solving Multi-Step Inequalities
OBJ: 3-4.1 To solve multi-step inequalities STA: MA.912.A.3.4| MA.912.A.3.5
TOP: 3-4 Problem 4 Solving an Inequality With Variables on Both Sides
DOK: DOK 1

119. ANS:
$n \geq -4$

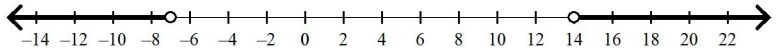
PTS: 1 DIF: L2 REF: 3-4 Solving Multi-Step Inequalities
OBJ: 3-4.1 To solve multi-step inequalities STA: MA.912.A.3.4| MA.912.A.3.5
TOP: 3-4 Problem 4 Solving an Inequality With Variables on Both Sides
DOK: DOK 1

120. ANS:
$-8 < x < 8$



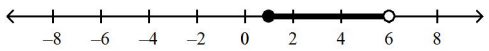
PTS: 1 DIF: L3 REF: 3-6 Compound Inequalities
OBJ: 3-6.1 To solve and graph inequalities containing the word and
STA: MA.912.A.3.4 TOP: 3-6 Problem 1 Writing a Compound Inequality
KEY: compound inequality DOK: DOK 2

121. ANS:
$w < -7$ or $w > 14$



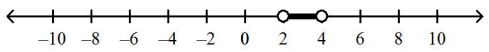
PTS: 1 DIF: L3 REF: 3-6 Compound Inequalities
OBJ: 3-6.1 To solve and graph inequalities containing the word and
STA: MA.912.A.3.4 TOP: 3-6 Problem 1 Writing a Compound Inequality
KEY: compound inequality DOK: DOK 2

122. ANS:
$1 \le x < 6$



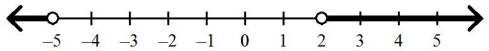
PTS: 1 DIF: L3 REF: 3-6 Compound Inequalities
OBJ: 3-6.1 To solve and graph inequalities containing the word and
STA: MA.912.A.3.4
TOP: 3-6 Problem 2 Solving a Compound Inequality Involving And
KEY: compound inequality DOK: DOK 1

123. ANS:
$2 < x < 4$



PTS: 1 DIF: L3 REF: 3-6 Compound Inequalities
OBJ: 3-6.1 To solve and graph inequalities containing the word and
STA: MA.912.A.3.4
TOP: 3-6 Problem 2 Solving a Compound Inequality Involving And
KEY: compound inequality DOK: DOK 1

124. ANS:
$x < -5$ or $x > 2$



PTS: 1 DIF: L3 REF: 3-6 Compound Inequalities
OBJ: 3-6.2 To solve and graph inequalities containing the word or
STA: MA.912.A.3.4
TOP: 3-6 Problem 4 Solving a Compound Inequality Involving Or
KEY: compound inequality DOK: DOK 1

125. ANS:
1

PTS: 1 DIF: L2 REF: 7-1 Zero and Negative Exponents
OBJ: 7-1.1 To simplify expressions involving zero and negative exponents
STA: MA.912.A.4.1 TOP: 7-1 Problem 1 Simplifying Powers
DOK: DOK 1

126. ANS:
$-\frac{1}{10}$

PTS: 1 DIF: L2 REF: 7-1 Zero and Negative Exponents
OBJ: 7-1.1 To simplify expressions involving zero and negative exponents
STA: MA.912.A.4.1 TOP: 7-1 Problem 1 Simplifying Powers
DOK: DOK 1

127. ANS:
$-\frac{1}{32}$

PTS: 1 DIF: L3 REF: 7-1 Zero and Negative Exponents
OBJ: 7-1.1 To simplify expressions involving zero and negative exponents
STA: MA.912.A.4.1 TOP: 7-1 Problem 1 Simplifying Powers
DOK: DOK 1

128. ANS:
$\frac{3b^2}{g^2}$

PTS: 1 DIF: L2 REF: 7-1 Zero and Negative Exponents
OBJ: 7-1.1 To simplify expressions involving zero and negative exponents
STA: MA.912.A.4.1 TOP: 7-1 Problem 2 Simplifying Exponential Expressions
DOK: DOK 1

129. ANS:
c^5

PTS: 1 DIF: L3 REF: 7-1 Zero and Negative Exponents
OBJ: 7-1.1 To simplify expressions involving zero and negative exponents
STA: MA.912.A.4.1 TOP: 7-1 Problem 2 Simplifying Exponential Expressions
DOK: DOK 1

130. ANS:
$\frac{3g^2}{h^3}$

PTS: 1 DIF: L3 REF: 7-1 Zero and Negative Exponents
OBJ: 7-1.1 To simplify expressions involving zero and negative exponents
STA: MA.912.A.4.1 TOP: 7-1 Problem 2 Simplifying Exponential Expressions
DOK: DOK 1

131. ANS:
$\frac{1}{18}$

PTS: 1 DIF: L2 REF: 7-1 Zero and Negative Exponents
OBJ: 7-1.1 To simplify expressions involving zero and negative exponents
STA: MA.912.A.4.1 TOP: 7-1 Problem 3 Evaluating an Exponential Expression
DOK: DOK 1

132. ANS:
1.22×10^9

PTS: 1 DIF: L3 REF: 7-2 Scientific Notation
OBJ: 7-2.1 To write numbers in scientific and standard notation
TOP: 7-2 Problem 2 Writing a Number in Scientific Notation KEY: scientific notation
DOK: DOK 1

133. ANS:
2.87×10^{-2}

PTS: 1 DIF: L3 REF: 7-2 Scientific Notation
OBJ: 7-2.1 To write numbers in scientific and standard notation
TOP: 7-2 Problem 2 Writing a Number in Scientific Notation KEY: scientific notation
DOK: DOK 1

134. ANS:
5,000

PTS: 1 DIF: L3 REF: 7-2 Scientific Notation
OBJ: 7-2.1 To write numbers in scientific and standard notation
TOP: 7-2 Problem 3 Writing a Number in Standard Notation KEY: scientific notation
DOK: DOK 1

135. ANS:
0.00571

PTS: 1 DIF: L3 REF: 7-2 Scientific Notation
OBJ: 7-2.1 To write numbers in scientific and standard notation
TOP: 7-2 Problem 3 Writing a Number in Standard Notation KEY: scientific notation
DOK: DOK 1

136. ANS:
4^{11}

PTS: 1 DIF: L2 REF: 7-3 Multiplying Powers With the Same Base
OBJ: 7-3.1 To multiply powers with the same base STA: MA.912.A.4.1
TOP: 7-3 Problem 1 Multiplying Powers DOK: DOK 1

137. ANS:
3.16

PTS: 1 DIF: L3 REF: 7-3 Multiplying Powers With the Same Base
OBJ: 7-3.1 To multiply powers with the same base STA: MA.912.A.4.1
TOP: 7-3 Problem 1 Multiplying Powers DOK: DOK 1

138. ANS:
–4

PTS: 1 DIF: L4 REF: 7-3 Multiplying Powers With the Same Base
OBJ: 7-3.1 To multiply powers with the same base STA: MA.912.A.4.1
TOP: 7-3 Problem 1 Multiplying Powers DOK: DOK 1

139. ANS:
1

PTS: 1 DIF: L3 REF: 7-3 Multiplying Powers With the Same Base
OBJ: 7-3.1 To multiply powers with the same base STA: MA.912.A.4.1
TOP: 7-3 Problem 1 Multiplying Powers DOK: DOK 1

140. ANS:
$12c^9$

PTS: 1 DIF: L2 REF: 7-3 Multiplying Powers With the Same Base
OBJ: 7-3.1 To multiply powers with the same base STA: MA.912.A.4.1
TOP: 7-3 Problem 2 Multiplying Powers in Algebraic Expressions
DOK: DOK 1

141. ANS:
$-12x^{12}y^9$

PTS: 1 DIF: L4 REF: 7-3 Multiplying Powers With the Same Base
OBJ: 7-3.1 To multiply powers with the same base STA: MA.912.A.4.1
TOP: 7-3 Problem 2 Multiplying Powers in Algebraic Expressions
DOK: DOK 1

142. ANS:
5.6×10^{12}

PTS: 1 DIF: L2 REF: 7-3 Multiplying Powers With the Same Base
OBJ: 7-3.1 To multiply powers with the same base STA: MA.912.A.4.1
TOP: 7-3 Problem 3 Multiplying Numbers in Scientific Notation
DOK: DOK 1

143. ANS:
6.3×10^{-13}

PTS: 1 DIF: L3 REF: 7-3 Multiplying Powers With the Same Base
OBJ: 7-3.1 To multiply powers with the same base STA: MA.912.A.4.1
TOP: 7-3 Problem 3 Multiplying Numbers in Scientific Notation
DOK: DOK 1

144. ANS:
2.4×10^3

PTS: 1 DIF: L3 REF: 7-3 Multiplying Powers With the Same Base
OBJ: 7-3.1 To multiply powers with the same base STA: MA.912.A.4.1
TOP: 7-3 Problem 3 Multiplying Numbers in Scientific Notation
DOK: DOK 1

145. ANS:
5.76×10^{14} miles

PTS: 1 DIF: L3 REF: 7-3 Multiplying Powers With the Same Base
OBJ: 7-3.1 To multiply powers with the same base STA: MA.912.A.4.1
TOP: 7-3 Problem 4 Multiplying Numbers in Scientific Notation
DOK: DOK 2

146. ANS:
1.62×10^{10} dollars

PTS: 1 DIF: L3 REF: 7-3 Multiplying Powers With the Same Base
OBJ: 7-3.1 To multiply powers with the same base STA: MA.912.A.4.1
TOP: 7-3 Problem 4 Multiplying Numbers in Scientific Notation
DOK: DOK 2

147. ANS:
m^{14}

PTS: 1 DIF: L2 REF: 7-4 More Multiplication Properties of Exponents
OBJ: 7-4.1 To raise a power to a power STA: MA.912.A.4.1
TOP: 7-4 Problem 1 Simplifying a Power Raised to a Power DOK: DOK 1

148. ANS:
$\frac{1}{k^{18}}$

PTS: 1 DIF: L3 REF: 7-4 More Multiplication Properties of Exponents
OBJ: 7-4.1 To raise a power to a power STA: MA.912.A.4.1
TOP: 7-4 Problem 1 Simplifying a Power Raised to a Power DOK: DOK 1

149. ANS:
t^8

PTS: 1 DIF: L3 REF: 7-4 More Multiplication Properties of Exponents
OBJ: 7-4.1 To raise a power to a power STA: MA.912.A.4.1
TOP: 7-4 Problem 2 Simplifying an Expression With Powers DOK: DOK 1

150. ANS:
y^{60}

PTS: 1 DIF: L4 REF: 7-4 More Multiplication Properties of Exponents
OBJ: 7-4.1 To raise a power to a power STA: MA.912.A.4.1
TOP: 7-4 Problem 2 Simplifying an Expression With Powers DOK: DOK 1

151. ANS:
$81q^8$

PTS: 1 DIF: L3 REF: 7-4 More Multiplication Properties of Exponents
OBJ: 7-4.2 To raise a product to a power STA: MA.912.A.4.1
TOP: 7-4 Problem 3 Simplifying a Product Raised to a Power DOK: DOK 1

152. ANS:
$\frac{1}{1296} q^{-24}$

PTS: 1 DIF: L3 REF: 7-4 More Multiplication Properties of Exponents
OBJ: 7-4.2 To raise a product to a power STA: MA.912.A.4.1
TOP: 7-4 Problem 3 Simplifying a Product Raised to a Power DOK: DOK 1

153. ANS:
$-125a^{37}b^{32}$

PTS: 1 DIF: L4 REF: 7-4 More Multiplication Properties of Exponents
OBJ: 7-4.2 To raise a product to a power STA: MA.912.A.4.1
TOP: 7-4 Problem 4 Simplifying an Expression With Products DOK: DOK 1

154. ANS:
$216c^{21}d^{36}$

PTS: 1 DIF: L4 REF: 7-4 More Multiplication Properties of Exponents
OBJ: 7-4.2 To raise a product to a power STA: MA.912.A.4.1
TOP: 7-4 Problem 4 Simplifying an Expression With Products DOK: DOK 1

155. ANS:
8.75×10^8 km^2

PTS: 1 DIF: L4 REF: 7-4 More Multiplication Properties of Exponents
OBJ: 7-4.2 To raise a product to a power STA: MA.912.A.4.1
TOP: 7-4 Problem 5 Raising a Number in Scientific Notation to a Power
DOK: DOK 1

156. ANS:
3.05×10^9 m^3

PTS: 1 DIF: L4 REF: 7-4 More Multiplication Properties of Exponents
OBJ: 7-4.2 To raise a product to a power STA: MA.912.A.4.1
TOP: 7-4 Problem 5 Raising a Number in Scientific Notation to a Power
DOK: DOK 1

157. ANS:
n^4

PTS: 1 DIF: L2 REF: 7-5 Division Properties of Exponents
OBJ: 7-5.1 To divide powers with the same base STA: MA.912.A.4.1
TOP: 7-5 Problem 1 Dividing Algebraic Expressions DOK: DOK 1

158. ANS:
$\frac{1}{a^{15}}$

PTS: 1 DIF: L3 REF: 7-5 Division Properties of Exponents
OBJ: 7-5.1 To divide powers with the same base STA: MA.912.A.4.1
TOP: 7-5 Problem 1 Dividing Algebraic Expressions DOK: DOK 1

159. ANS:
$\frac{c^{12}}{d^4}$

PTS: 1 DIF: L3 REF: 7-5 Division Properties of Exponents
OBJ: 7-5.1 To divide powers with the same base STA: MA.912.A.4.1
TOP: 7-5 Problem 1 Dividing Algebraic Expressions DOK: DOK 1

160. ANS:
3.7×10^6

PTS: 1 DIF: L4 REF: 7-5 Division Properties of Exponents
OBJ: 7-5.1 To divide powers with the same base STA: MA.912.A.4.1
TOP: 7-5 Problem 2 Dividing Numbers in Scientific Notation DOK: DOK 2

161. ANS:
$\frac{81x^4}{16}$

PTS: 1 DIF: L2 REF: 7-5 Division Properties of Exponents
OBJ: 7-5.2 To raise a quotient to a power STA: MA.912.A.4.1
TOP: 7-5 Problem 3 Raising a Quotient to a Power DOK: DOK 1

162. ANS:
$\frac{4}{25n^{18}}$

PTS: 1 DIF: L3 REF: 7-5 Division Properties of Exponents
OBJ: 7-5.2 To raise a quotient to a power STA: MA.912.A.4.1
TOP: 7-5 Problem 3 Raising a Quotient to a Power DOK: DOK 1

163. ANS:
$\frac{m^4}{100j^{10}}$

PTS: 1 DIF: L3 REF: 7-5 Division Properties of Exponents
OBJ: 7-5.2 To raise a quotient to a power STA: MA.912.A.4.1
TOP: 7-5 Problem 3 Raising a Quotient to a Power DOK: DOK 1

164. ANS:
$\frac{512p^{12}}{k^{12}}$

PTS: 1 DIF: L3 REF: 7-5 Division Properties of Exponents
OBJ: 7-5.2 To raise a quotient to a power STA: MA.912.A.4.1
TOP: 7-5 Problem 4 Simplifying an Exponential Expression DOK: DOK 1

165. ANS:
$\frac{10000y^{16}}{t^{16}}$

PTS: 1 DIF: L3 REF: 7-5 Division Properties of Exponents
OBJ: 7-5.2 To raise a quotient to a power STA: MA.912.A.4.1
TOP: 7-5 Problem 4 Simplifying an Exponential Expression DOK: DOK 1

166. ANS:
2,684,354,560 crickets

PTS: 1 DIF: L3 REF: 7-6 Exponential Functions
OBJ: 7-6.1 To evaluate and graph exponential functions
TOP: 7-6 Problem 2 Evaluating an Exponential Function KEY: exponential function
DOK: DOK 1

167. ANS:
$9,200

PTS: 1 DIF: L3 REF: 7-6 Exponential Functions
OBJ: 7-6.1 To evaluate and graph exponential functions
TOP: 7-6 Problem 2 Evaluating an Exponential Function KEY: exponential function
DOK: DOK 1

168. ANS:
Distributive Property

PTS: 1 DIF: L2 REF: 1-2 Properties of Real Numbers
OBJ: 1-2.2 To identify properties of real numbers
TOP: 1-2 Problem 4 Identifying Properties of Real Numbers KEY:
DOK: DOK 1

169. ANS:
Commutative Property of Addition

PTS: 1 DIF: L2 REF: 1-2 Properties of Real Numbers
OBJ: 1-2.2 To identify properties of real numbers
TOP: 1-2 Problem 4 Identifying Properties of Real Numbers KEY:
DOK: DOK 1

170. ANS:
–55

PTS: 1 DIF: L2 REF: 1-3 Algebraic Expressions
OBJ: 1-3.1 To evaluate algebraic expressions
TOP: 1-3 Problem 3 Evaluating Algebraic Expressions KEY: evaluate
DOK: DOK 1

171. ANS:
48

PTS: 1 DIF: L4 REF: 1-3 Algebraic Expressions
OBJ: 1-3.1 To evaluate algebraic expressions
TOP: 1-3 Problem 3 Evaluating Algebraic Expressions KEY: evaluate
DOK: DOK 1

172. ANS:
–1

PTS: 1 DIF: L3 REF: 1-3 Algebraic Expressions
OBJ: 1-3.1 To evaluate algebraic expressions
TOP: 1-3 Problem 3 Evaluating Algebraic Expressions KEY: evaluate
DOK: DOK 1

173. ANS:
$12c - 7d$

PTS: 1 DIF: L2 REF: 1-3 Algebraic Expressions
OBJ: 1-3.2 To simplify algebraic expressions
TOP: 1-3 Problem 5 Simplifying Algebraic Expressions KEY: like terms
DOK: DOK 2

174. ANS:
$19y - 9$

PTS: 1 DIF: L3 REF: 1-3 Algebraic Expressions
OBJ: 1-3.2 To simplify algebraic expressions
TOP: 1-3 Problem 5 Simplifying Algebraic Expressions KEY: like terms
DOK: DOK 2

175. ANS:
–1.3

PTS: 1 DIF: L3 REF: 1-4 Solving Equations
OBJ: 1-4.1 To solve equations STA: MA.912.A.10.3
TOP: 1-4 Problem 2 Solving a Multi-Step Equation
KEY: equation | solution of an equation | inverse operations DOK: DOK 1

176. ANS:
–17

PTS: 1 DIF: L2 REF: 1-4 Solving Equations
OBJ: 1-4.1 To solve equations STA: MA.912.A.10.3
TOP: 1-4 Problem 2 Solving a Multi-Step Equation
KEY: equation | solution of an equation | inverse operations DOK: DOK 1

177. ANS:
–0.5

PTS: 1 DIF: L3 REF: 1-4 Solving Equations
OBJ: 1-4.1 To solve equations STA: MA.912.A.10.3
TOP: 1-4 Problem 2 Solving a Multi-Step Equation
KEY: equation | solution of an equation | inverse operations DOK: DOK 1

178. ANS:
$-2\frac{1}{2}$

PTS: 1 DIF: L2 REF: 1-4 Solving Equations
OBJ: 1-4.1 To solve equations STA: MA.912.A.10.3
TOP: 1-4 Problem 2 Solving a Multi-Step Equation
KEY: equation | solution of an equation | inverse operations DOK: DOK 1

179. ANS:
7.5 cm by 22.5 cm

PTS: 1 DIF: L3 REF: 1-4 Solving Equations
OBJ: 1-4.2 To solve problems by writing equations STA: MA.912.A.10.3
TOP: 1-4 Problem 3 Using an Equation to Solve a Problem KEY: equation | solution of an equation
DOK: DOK 2

180. ANS:
22.5 cm, 30 cm, and 37.5 cm

PTS: 1 DIF: L3 REF: 1-4 Solving Equations
OBJ: 1-4.2 To solve problems by writing equations STA: MA.912.A.10.3
TOP: 1-4 Problem 3 Using an Equation to Solve a Problem KEY: equation | solution of an equation
DOK: DOK 2

181. ANS:
45 mi/h and 55 mi/h

PTS: 1 DIF: L3 REF: 1-4 Solving Equations
OBJ: 1-4.2 To solve problems by writing equations STA: MA.912.A.10.3
TOP: 1-4 Problem 3 Using an Equation to Solve a Problem KEY: equation | solution of an equation
DOK: DOK 2

182. ANS:
always

PTS: 1 DIF: L3 REF: 1-4 Solving Equations
OBJ: 1-4.1 To solve equations STA: MA.912.A.10.3
TOP: 1-4 Problem 4 Equations with No Solutions and Identities
KEY: equation | identity DOK: DOK 1

183. ANS:
never

PTS: 1 DIF: L3 REF: 1-4 Solving Equations
OBJ: 1-4.1 To solve equations STA: MA.912.A.10.3
TOP: 1-4 Problem 4 Equations with No Solutions and Identities
KEY: equation DOK: DOK 1

184. ANS:

$t = \dfrac{S}{5r^2}$

PTS: 1 DIF: L3 REF: 1-4 Solving Equations
OBJ: 1-4.1 To solve equations STA: MA.912.A.10.3
TOP: 1-4 Problem 5 Solving a Literal Equation KEY: equation | literal equation
DOK: DOK 2

185. ANS:

$U = \dfrac{TE}{4}$

PTS: 1 DIF: L3 REF: 1-4 Solving Equations
OBJ: 1-4.1 To solve equations STA: MA.912.A.10.3
TOP: 1-4 Problem 5 Solving a Literal Equation KEY: equation | literal equation
DOK: DOK 2

186. ANS:

$x - 14 \geq -8$

PTS: 1 DIF: L2 REF: 1-5 Solving Inequalities
OBJ: 1-5.1 To solve and graph inequalities STA: MA.912.A.10.3
TOP: 1-5 Problem 1 Writing an Inequality from a Sentence
KEY: compound inequality | word problem | problem solving DOK: DOK 1

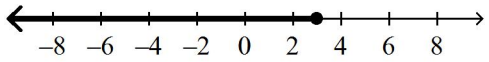
187. ANS:

$12n \leq 15$

PTS: 1 DIF: L3 REF: 1-5 Solving Inequalities
OBJ: 1-5.1 To solve and graph inequalities STA: MA.912.A.10.3
TOP: 1-5 Problem 1 Writing an Inequality from a Sentence
KEY: compound inequality | word problem | problem solving DOK: DOK 1

188. ANS:

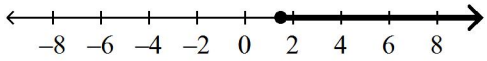
$k \leq 3$



PTS: 1 DIF: L2 REF: 1-5 Solving Inequalities
OBJ: 1-5.1 To solve and graph inequalities STA: MA.912.A.10.3
TOP: 1-5 Problem 2 Solving and Graphing an Inequality DOK: DOK 2

189. ANS:

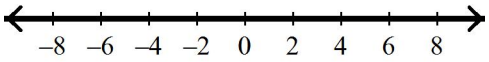
$r \geq 1\frac{1}{2}$



PTS: 1 DIF: L2 REF: 1-5 Solving Inequalities
OBJ: 1-5.1 To solve and graph inequalities STA: MA.912.A.10.3
TOP: 1-5 Problem 2 Solving and Graphing an Inequality DOK: DOK 2

190. ANS:

all real numbers



PTS: 1 DIF: L3 REF: 1-5 Solving Inequalities
OBJ: 1-5.1 To solve and graph inequalities STA: MA.912.A.10.3
TOP: 1-5 Problem 2 Solving and Graphing an Inequality DOK: DOK 2

191. ANS:

$15x - (9x + 20) \geq 150$; $x \geq 28.33$

PTS: 1 DIF: L3 REF: 1-5 Solving Inequalities
OBJ: 1-5.1 To solve and graph inequalities STA: MA.912.A.10.3
TOP: 1-5 Problem 3 Using an Inequality DOK: DOK 2

192. ANS:

$h < 64$ in.

PTS: 1 DIF: L3 REF: 1-5 Solving Inequalities
OBJ: 1-5.1 To solve and graph inequalities STA: MA.912.A.10.3
TOP: 1-5 Problem 3 Using an Inequality DOK: DOK 2

193. ANS:

never

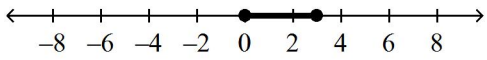
PTS: 1 DIF: L3 REF: 1-5 Solving Inequalities
OBJ: 1-5.1 To solve and graph inequalities STA: MA.912.A.10.3
TOP: 1-5 Problem 4 No Solution or All Real Numbers as Solution
KEY: DOK: DOK 2

194. ANS:

always

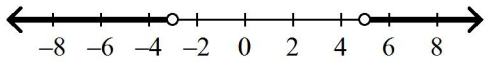
PTS: 1 DIF: L3 REF: 1-5 Solving Inequalities
OBJ: 1-5.1 To solve and graph inequalities STA: MA.912.A.10.3
TOP: 1-5 Problem 4 No Solution or All Real Numbers as Solution
KEY: DOK: DOK 2

195. ANS:
$x \geq 0$ and $x \leq 3$



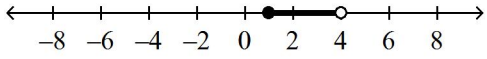
PTS: 1 DIF: L3 REF: 1-5 Solving Inequalities
OBJ: 1-5.2 To write and solve compound inequalities STA: MA.912.A.10.3
TOP: 1-5 Problem 5 Solving an AND Inequality KEY: compound inequality
DOK: DOK 2

196. ANS:
$x < -3$ or $x > 5$



PTS: 1 DIF: L3 REF: 1-5 Solving Inequalities
OBJ: 1-5.2 To write and solve compound inequalities STA: MA.912.A.10.3
TOP: 1-5 Problem 6 Solving an OR Inequality KEY: compound inequality
DOK: DOK 2

197. ANS:
$1 \leq x < 4$



PTS: 1 DIF: L3 REF: 1-5 Solving Inequalities
OBJ: 1-5.2 To write and solve compound inequalities STA: MA.912.A.10.3
TOP: 1-5 Problem 5 Solving an AND Inequality KEY: compound inequality
DOK: DOK 2