Name: _____ **Rising Math 7 Summer Work**

1. Evaluate the expression shown below and write your answer **as a fraction** in simplest form.

$$\frac{10}{13} - \frac{9}{13}$$

2. Evaluate the expression shown below and write your answer **as a fraction** in simplest form.

$$\frac{7}{12} + \frac{2}{9}$$

3. Evaluate the expression shown below and write your answer **as a fraction** in simplest form.

$$\frac{4}{9} + \frac{5}{11}$$

4. Evaluate the expression shown below and write your answer **as a fraction** in simplest form.

$$\frac{1}{2} - \frac{1}{14}$$

5. Evaluate the expression shown below and write your answer **as a fraction** in simplest form.

$$\frac{4}{19} + \frac{8}{19}$$

6. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$\frac{8}{15} - \frac{11}{12}$$

7. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$\frac{8}{11} - \frac{1}{10}$$

8. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$\frac{11}{17} - \frac{1}{17}$$

9. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$\frac{9}{2} - \frac{11}{16}$$

10. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$\frac{9}{10} + \frac{5}{6}$$

11. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$-\frac{12}{7} + \frac{5}{63}$$

12. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$\frac{6}{7} + \left(-\frac{8}{7}\right)$$

13. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$-\frac{9}{10} - \left(-\frac{1}{10}\right)$$

14. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$-\frac{7}{19} - \frac{1}{19}$$

15. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$-\frac{12}{7} + \left(-\frac{4}{49}\right)$$

16. Perform the operation and simplify the answer fully.

$$\frac{3}{2} \div \frac{5}{4}$$

17. Perform the operation and simplify the answer fully.

$$\frac{3}{5} \div \frac{7}{8}$$

18. Perform the operation and simplify the answer fully.

$$\frac{9}{7} \cdot \frac{1}{4}$$

19. Perform the operation and simplify the answer fully.

$$\frac{2}{3} \cdot \frac{3}{2}$$

20. Perform the operation and simplify the answer fully.

$$\frac{\frac{5}{3}}{\frac{9}{10}}$$

21. Without dividing, determine if $28,674$ is divisible by 5 and explain how you know.

22. Without dividing, determine if $16,365$ is divisible by 6 and explain how you know.

23. Without dividing, determine if $94,645$ is divisible by 2 and explain how you know.

24. Without dividing, determine if $12,348$ is divisible by 9 and explain how you know.

25. Without dividing, determine if $28,049$ is divisible by 3 and explain how you know.

26. Simplify: $\frac{6}{21}$

27. Simplify: $\frac{55}{99}$

28. Simplify: $\frac{24}{64}$

29. Simplify: $\frac{77}{110}$

30. Simplify: $\frac{32}{110}$

31. Round 6.498 to the nearest hundredth.

32. Round 1.39 to the nearest tenth.

33. Round 7.1 to the nearest whole number.

34. Round 4.148 to the nearest hundredth.

35. Round 8.6904 to the nearest hundredth.

36. What is 55% of 540?

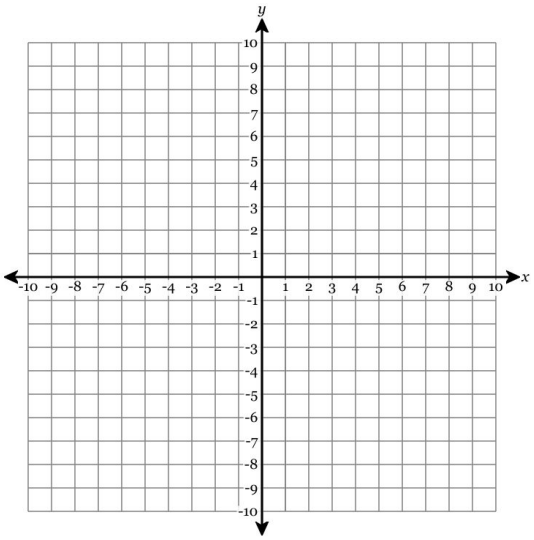
37. 272 is what percent of 800?

38. What is 55% of 140?

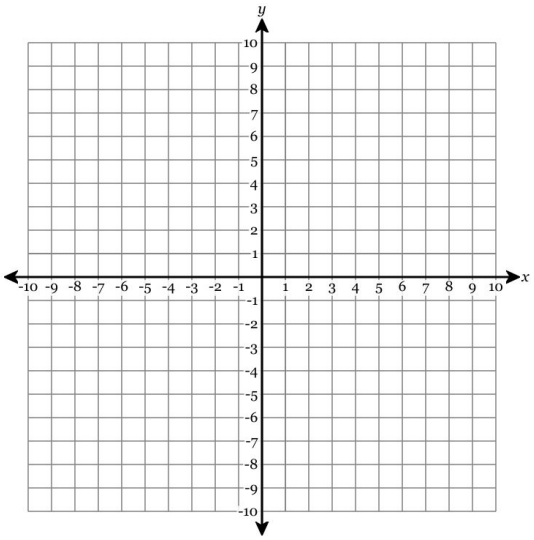
39. 366 is what percent of 600?

40. 46 is what percent of 50?

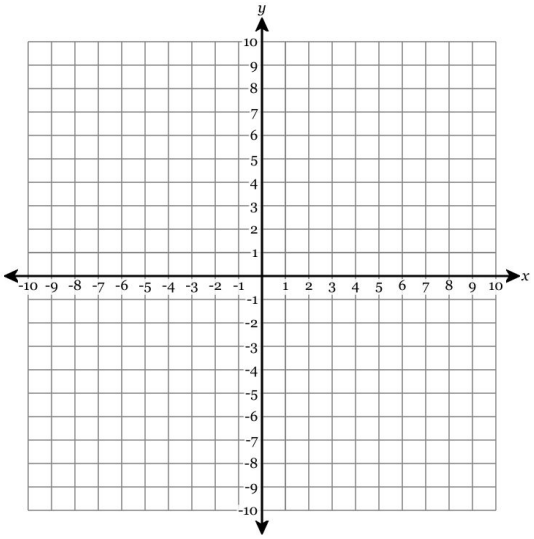
41. Plot the point $(3, -3)$.



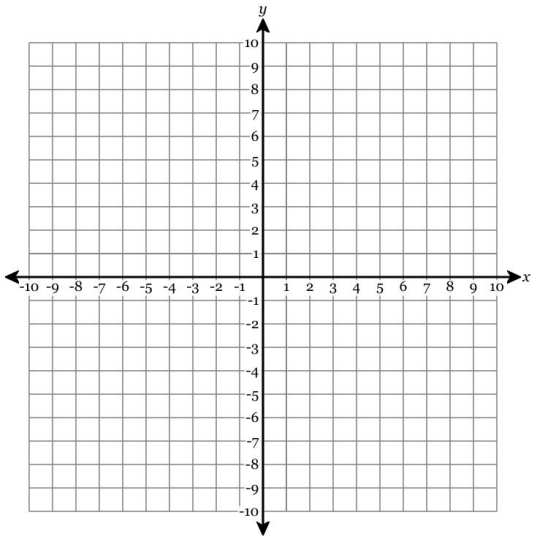
42. Plot the point $(5, 0)$.



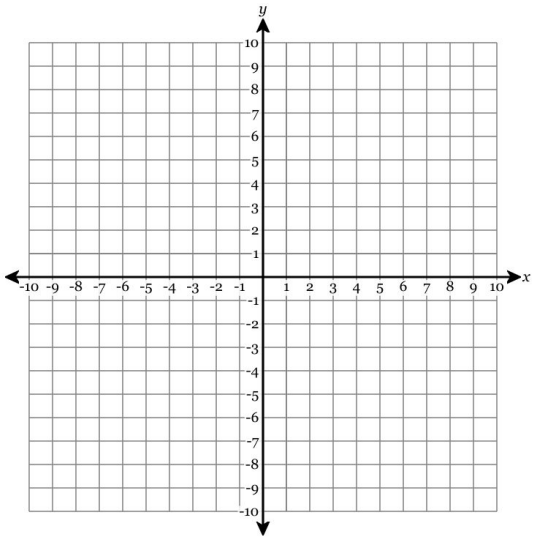
43. Plot the point $(4, 1)$.



44. Plot the point $(4, 8)$.



45. Plot the point $(3, 0)$.



46. Represent the following sentence as an algebraic expression, where "a number" is the letter x.

The sum of a number and 8.

47. Represent the following sentence as an algebraic expression, where "a number" is the letter x.

A number is tripled.

48. Represent the following sentence as an algebraic expression, where "a number" is the letter x.

The quotient of 4 and a number.

49. Represent the following sentence as an algebraic expression, where "a number" is the letter x.

The difference of a number and 9.

50. Represent the following sentence as an algebraic expression, where "a number" is the letter x.

A number raised to the eighth power.

51. What is the value of the expression $2y^2 + 4y + 7$ when $y = 5$?

52. What is the value of the expression $5y + 4$ when $y = 5$?

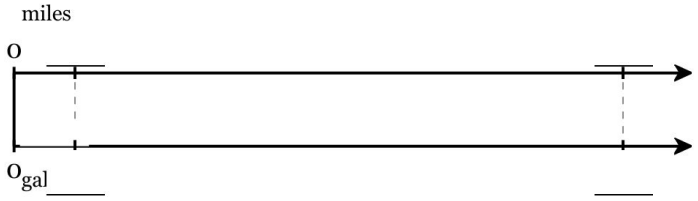
53. What is the value of the expression $10w - 6x$ when $w = 7$ and $x = 3$?

54. What is the value of the expression $8w - 4$ when $w = 8$?

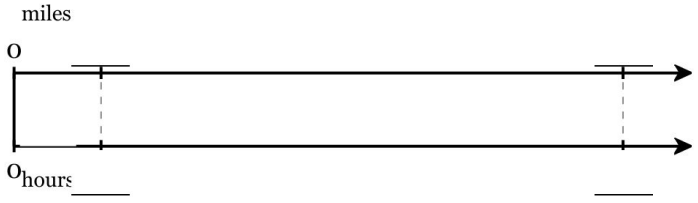
55. What is the value of the expression $3y - 3z$ when $y = 9$ and $z = 7$?

56. Elizabeth bought 24 fish sticks for $\$40.80$. How much does each fish stick cost?

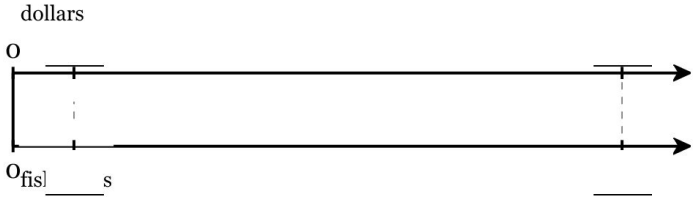
57. Cooper's car used 13 gallons to travel 442 miles. At what rate does the car use gas, in miles per gallon? On the double number line below, fill in the given values, then use multiplication or division to find the missing value.



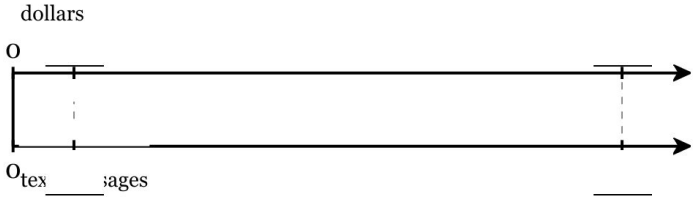
58. Aubrey drove 455 miles in 7 hours. If she drove at a constant rate, how far did she travel each hour? On the double number line below, fill in the given values, then use multiplication or division to find the missing value.



59. Camden bought 22 fish sticks for $\$24.20$. What was the cost of the fish sticks, in dollars per fish stick? On the double number line below, fill in the given values, then use multiplication or division to find the missing value.



60. It cost Aria $\$6.84$ to send 57 text messages. How much does it cost to send one text? On the double number line below, fill in the given values, then use multiplication or division to find the missing value.



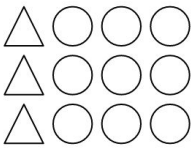
61. Find the ratio of circles to triangles in the diagram below.

Unsimplified ratio of circles to triangles:

$\square : \square$

For every 1 circle there are _____ triangles, therefore the simplified ratio of circles to triangles is _____ : _____.

62. Find the ratio of triangles to circles in the diagram below.

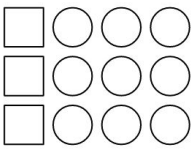


Unsimplified ratio of triangles to circles:

$\square : \square$

For every 1 triangle there are _____ circles, therefore the simplified ratio of triangles to circles is _____ : _____.

63. Find the ratio of squares to circles in the diagram below.

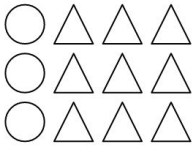


Unsimplified ratio of squares to circles:

$\square : \square$

For every 1 square there are _____ circles, therefore the simplified ratio of squares to circles is _____ : _____.

64. Find the ratio of circles to triangles in the diagram below.

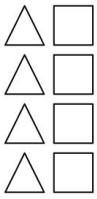


Unsimplified ratio of circles to triangles:

$\square : \square$

For every 1 circle there are _____ triangles, therefore the simplified ratio of circles to triangles is _____ : _____.

65. Find the ratio of triangles to squares in the diagram below.

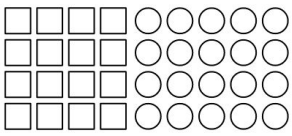


Unsimplified ratio of triangles to squares:

$\square : \square$

For every 1 triangle there are _____ squares, therefore the simplified ratio of triangles to squares is _____ : _____.

66. Find the ratio of squares to total shapes in the diagram below.

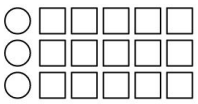


Unsimplified ratio of squares to total shapes:

$\square : \square$

For every 4 squares there are _____ total shapes, therefore the simplified ratio of squares to total shapes is _____ : _____.

67. Find the ratio of circles to squares in the diagram below.



Unsimplified ratio of circles to squares:

$\square : \square$

For every 1 circle there are _____ squares, therefore the simplified ratio of circles to squares is _____ : _____.

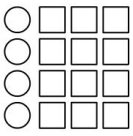
68. Find the ratio of triangles to total shapes in the diagram below.

Unsimplified ratio of triangles to total shapes:

$\square : \square$

For every 4 triangles there are _____ total shapes, therefore the simplified ratio of triangles to total shapes is _____ : _____.

69. Find the ratio of circles to squares in the diagram below.

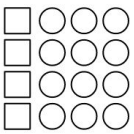


Unsimplified ratio of circles to squares:

$\square : \square$

For every 1 circle there are _____ squares, therefore the simplified ratio of circles to squares is _____ : _____.

70. Find the ratio of squares to circles in the diagram below.



Unsimplified ratio of squares to circles:

$\square : \square$

For every 1 square there are _____ circles, therefore the simplified ratio of squares to circles is _____ : _____.

71. Mackenzie bought 12 fish sticks for $\$19.20$. How much would it cost for 16 fish sticks?

72. Anthony's car used 4 gallons to travel 60 miles. How far can he travel on 14 gallons?

73. Grace drove 208 miles in 4 hours. If she continued at the same rate, how long would it take to travel 988 miles?

74. Fabian drove 145 miles in 5 hours. If he continued at the same rate, how long would it take to travel 116 miles?

75. One week, Robert earned $\$345.00$ at his job when he worked for 23 hours. If he is paid the same hourly wage, how much would he make the next week if he worked 16 hours?

76. The table below shows the cost of downloading songs from a website.

Number of Songs	Total Cost
15	$15.75
18	$18.90
20	$21

What is the constant of proportionality between the total cost and the number of songs?

77. A four-sided figure is resized to create a scaled copy. The lengths of its four sides change as in the table below.

Original Figure	Scaled Copy
55	5
77	7
132	12

Find the scale factor as a fraction in reduced terms.

78. The table below shows a proportional relationship between u and v.

u	v
7	21
9	27
18	54

Find the constant of proportionality from u to v. Express your answer as a fraction in reduced terms.

79. A store buys 5 sweaters for $30 and sells them for $135. How much profit does the store make per sweater?

80. Houa practices the piano 336 minutes in 2 weeks. At what rate did she practice, in minutes per day?

81. At the neighborhood grocery, 0.5 pounds of chicken breast cost $\$5.40$. Justin spent $\$34.56$ on chicken breast. How many pounds of chicken breast did he buy, to the nearest hundredth of a pound?

82. The table below shows that the number of miles driven by Damian is directly proportional to the number of gallons he used.

Gallons Used	Miles Driven
38	1071.6
44	1240.8
46	1297.2

How many miles can he travel on 8.5 gallons of gas?

83. The table below shows Malik's earnings on the job.

Time (hours)	Earnings (dollars)
17	$516.80
23	$699.20
25	$760

How long does it take him to make $\$463.60$?

84. The length of a cell phone is 1.2 inches and the width is 3.4 inches. The company making the cell phone wants to make a new version whose length will be 1.32 inches. Assuming the side lengths in the new phone are proportional to the old phone, what will be the width of the new phone?

85. A 9-inch candle burns down in 6 hours. After how many hours will it have burned $8\frac{1}{4}$ inches?

86. Find the value of x in the equation below.

$$28 = 7x$$

87. Find the value of x in the equation below.

$$x - 18 = 13$$

88. Find the value of x in the equation below.

$$1 + x = 20$$

89. Find the value of x in the equation below.

$$10 = \frac{x}{2}$$

90. Find the value of x in the equation below.

$$6x = 42$$

91. Find the value of x in the equation below.

$$3.1 = x - 18.2$$

92. Find the value of x in the equation below.

$$x + 2.9 = 5.1$$

93. Find the value of x in the equation below.

$$2.4 = \frac{x}{11}$$

94. Find the value of x in the equation below.

$$9x = 1.8$$

95. Find the value of x in the equation below.

$$1.9 + x = 4.5$$

96. Solve for b.

$$-30 = 6b$$

97. Solve for u.

$$20 = 5u$$

98. Solve for n.

$$-12n = 60$$

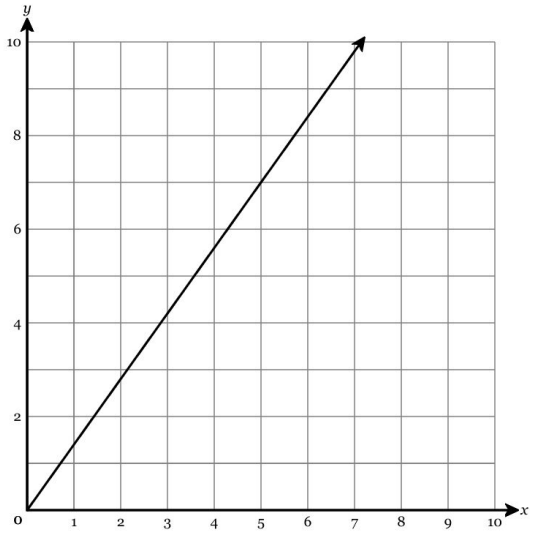
99. Solve for y.

$$-8y = -32$$

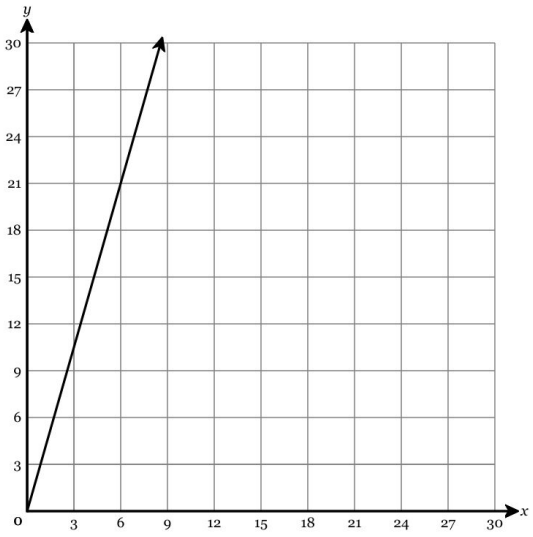
100. Solve for w.

$$-7 = -7w$$

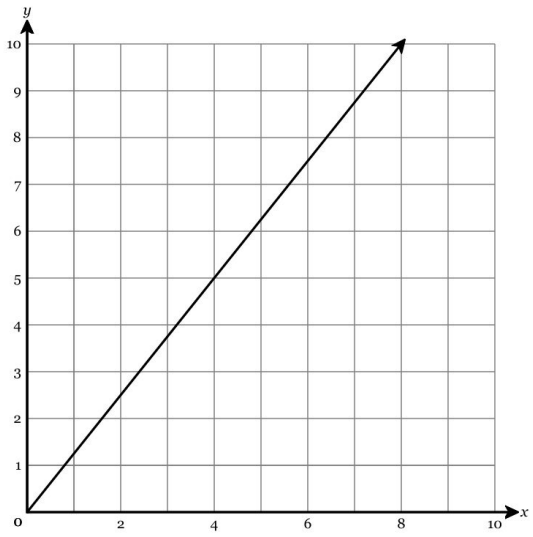
101. Find the equation that represents the proportional relationship in this graph, for y in terms of x.



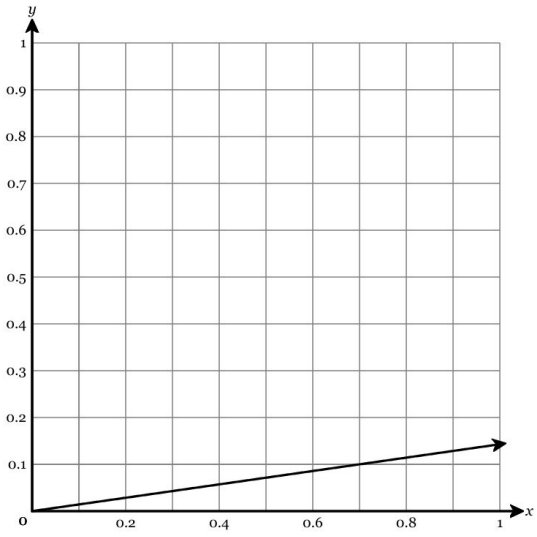
102. Find the equation that represents the proportional relationship in this graph, for y in terms of x.



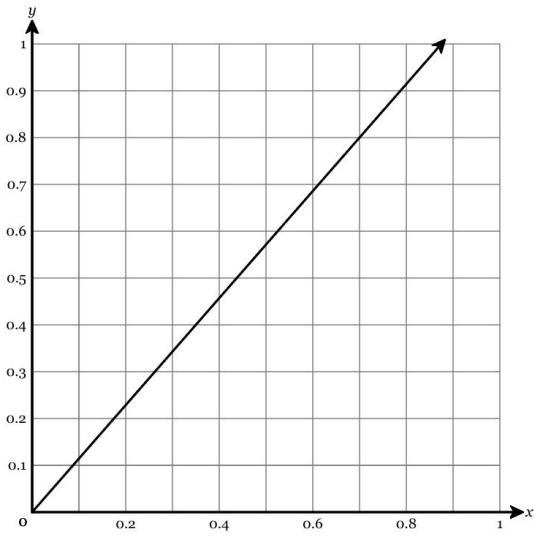
103. Find the equation that represents the proportional relationship in this graph, for y in terms of x.



104. Find the equation that represents the proportional relationship in this graph, for y in terms of x.

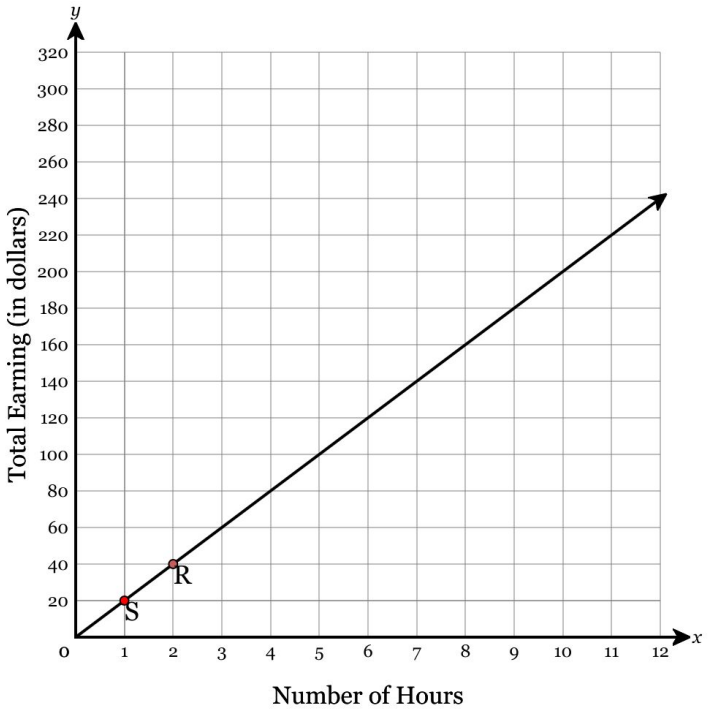


105. Find the equation that represents the proportional relationship in this graph, for y in terms of x.



106. Jacob has just gotten a new job. The relationship between the number of hours he works, x, and his total earnings, y, is represented by the graph below.

Two points, R and S, are labeled. Which statement about the graph is true?



A. Point S means that the unit rate is $20.00 per hour

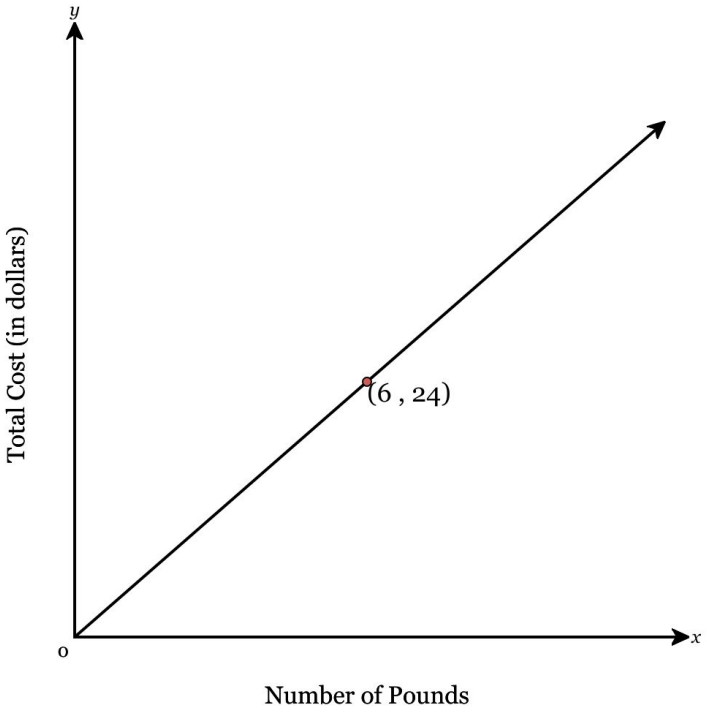
B. Point R means that the unit rate is 2 hours per dollar

C. Point S means that the unit rate is 20 hours per dollar

D. Point R means that the unit rate is $40.00 per hour

107. A grocery store sells sliced pastrami by weight. The relationship between the amount of pastrami in pounds, x, and the total cost in dollars of the sliced pastrami, y, is represented by the graph below.

What is the constant of proportionality as shown in the graph?



A. 18

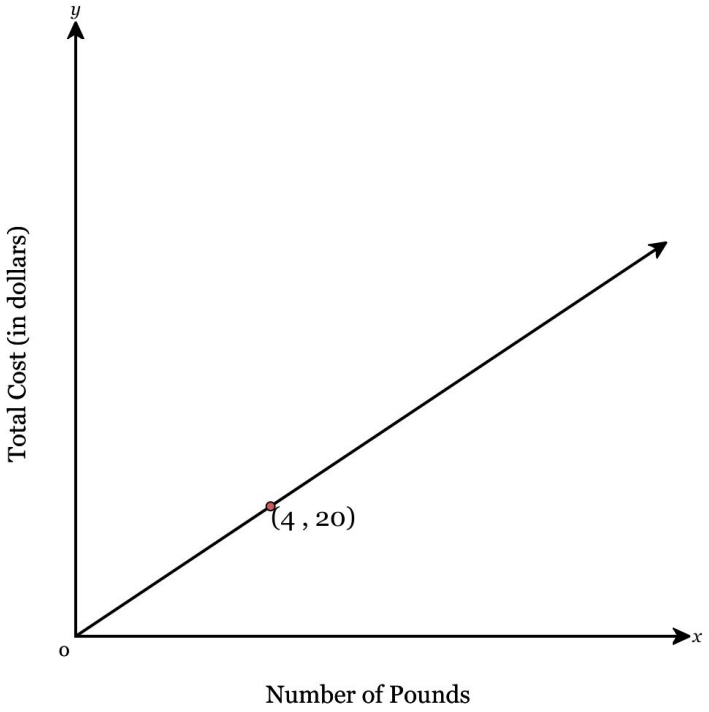
B. 24

C. 6

D. 4

108. A grocery store sells sliced Swiss cheese by weight. The relationship between the amount of Swiss cheese in pounds, x, and the total cost in dollars of the sliced Swiss cheese, y, is represented by the graph below.

A point $(4, 20)$ is labeled below. Which statement about the graph is true?



A. The unit rate is \$20.00 per pound

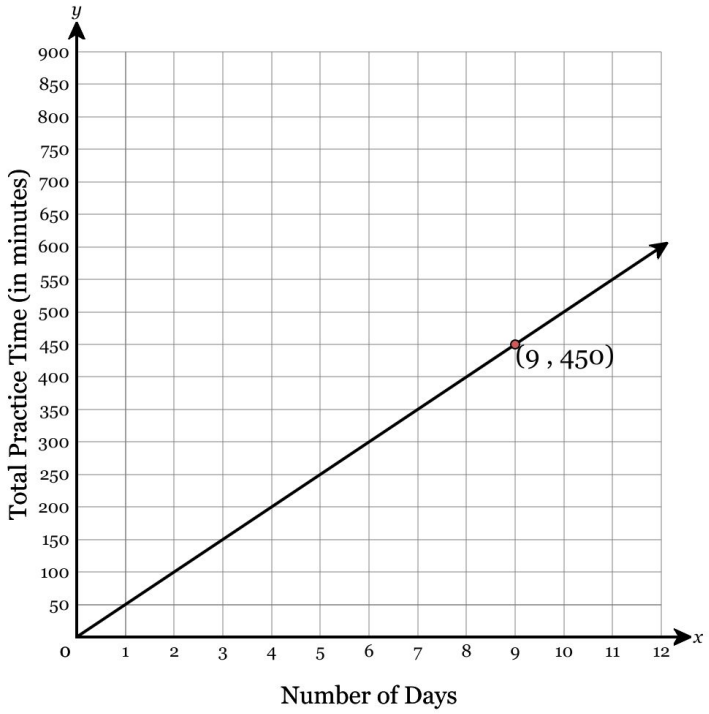
B. The unit rate is \$5.00 per pound

C. The unit rate is 4 pounds per dollar

D. The unit rate is 5 pounds per dollar

109. Violet practices the piano the same number of minutes each day. The relationship between the number of days, x, and the total number of minutes she practices, y, is represented by the graph below.

What does the ordered pair $(9, 450)$ indicate?



A. Violet practices 450 minutes a day for 9 days

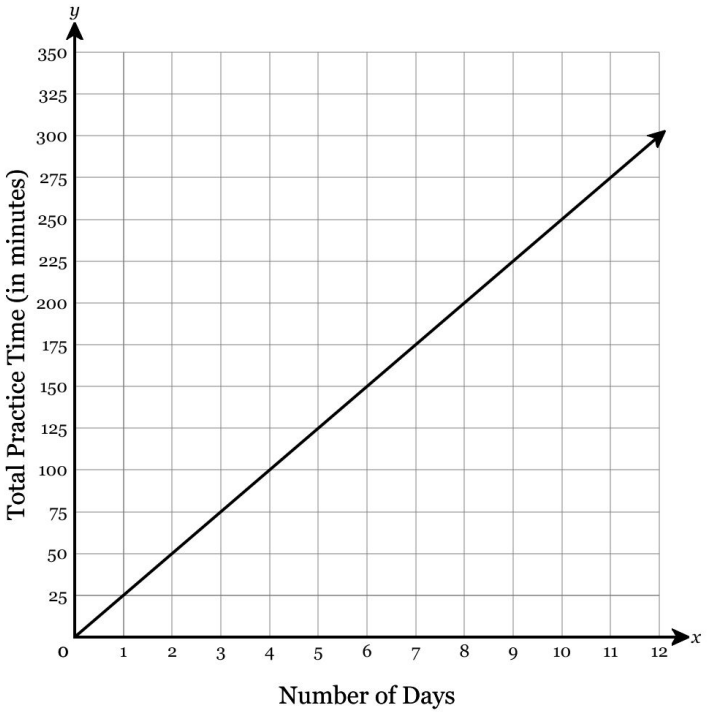
B. Violet practices 9 minutes a day for 450 days

C. Violet practices a total of 450 minutes over 9 days

D. Violet practices a total of 9 minutes over 450 days

110. Samuel practices the piano the same number of minutes each day. The relationship between the number of days, x, and the total number of minutes he practices, y, is represented by the graph below.

What point on the graph represents the unit rate?



A. $(0\ ,\ 0)$

B. $(25\ ,\ 1)$

C. $(2\ ,\ 50)$

D. $(1\ ,\ 25)$

111. Solve for a.

$$50 - \frac{a}{11} = 58$$

112. Solve for x.

$$-6 + 7x = 29$$

113. Solve for b.

$$42 = 42 + 9b$$

114. Solve for a.

$$-50 = 6a + 28$$

115. Solve for b.

$$39 = 28 - b$$

116. Solve for y.

$$2.6y + 3.6 = 2.04$$

117. Solve for c.

$$-\frac{c}{0.4} + 0.7 = 2.7$$

118. Solve for y.

$$3.9 = -\frac{y}{0.5} + 2.9$$

119. Solve for z.

$$-1.5 = -\frac{z}{1.9} + 0.5$$

120. Solve for y.

$$1.64 = -1.4 + 1.6y$$

121. Solve for a.

$$14 = -21 + \frac{5}{12}a$$

122. Solve for y.

$$7 + \frac{9}{10}y = 16$$

123. Solve for z.

$$\frac{1}{12}z + 9 = 14$$

124. Solve for y.

$$15 + \frac{11}{12}y = 59$$

125. Solve for y.

$$\frac{2}{7}y - 2 = 6$$

126. Use the distributive property to write an equivalent expression.

$$2(2v + 2w - 2)$$

127. Use the distributive property to write an equivalent expression.

$$3(10f + 9g)$$

128. Use the distributive property to write an equivalent expression.

$$9(6m - 9n + 9)$$

129. Use the distributive property to write an equivalent expression.

$$9(y + 10)$$

130. Use the distributive property to write an equivalent expression.

$$4(s - 5t + 7)$$

131. Use an exponent to condense the expression below. Then compute.

$$0 \times 0 \times 0 \times 0 \times 0 \times 0$$

132. Use multiplication to expand the expression below. Then compute.

$$3^3$$

133. Use multiplication to expand the expression below. Then compute.

$$0^5$$

134. Use multiplication to expand the expression below. Then compute.

$$5^3$$

135. Use multiplication to expand the expression below. Then compute.

$$0^2$$

136. The table below shows the elevation at which different artifacts were found in an archeological dig.

Artifact	Elevation
arrow head	-1025 feet
bone	1115 feet
necklace	0 feet
clay bowl	405 feet
woven blanket	-544 feet

Which of these artifacts was discovered at the lowest elevation?

A. clay bowl

B. arrow head

C. woven blanket

D. necklace

137. The list below shows the temperature Naomi recorded at 11:00 p.m. for four days last January.

Monday: 7°F

Tuesday: -20°F

Wednesday: 3°F

Thursday: 0°F

On which of the days did Naomi record the lowest (coldest) temperature?

A. Monday

B. Tuesday

C. Wednesday

D. Thursday

138. The stock market gained and lost value over the first four days of the week.

STOCK MARKET VALUE

Day	Change
Monday	-90.44
Tuesday	$+86.95$
Wednesday	$+106.30$
Thursday	-100.74

If the stock market lost value on Friday, which value could represent this change?

A. -95.61

B. 0

C. $+108.11$

D. $+76.35$

139. The stock market gained and lost value over the first four days of the week.

STOCK MARKET VALUE

Day	Change
Monday	-87.29
Tuesday	$+28.80$
Wednesday	$+81.20$
Thursday	$+28.47$

If the stock market lost value on Friday, which value could represent this change?

A. $+19.94$

B. 0

C. $+29.61$

D. -74.85

140. The stock market gained and lost value over the first four days of the week.

STOCK MARKET VALUE

Day	Change
Monday	$+26.53$
Tuesday	-31.62
Wednesday	-39.29
Thursday	-81.91

On which day did the stock market gain value?

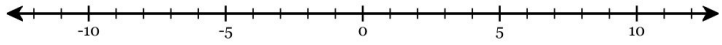
A. Monday

B. Tuesday

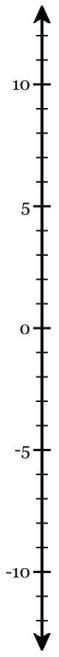
C. Wednesday

D. Thursday

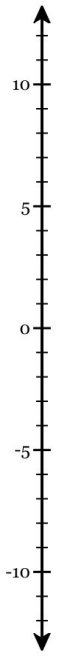
141. Point A is located at 3. Plot Point A on the number line below.



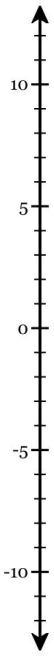
142. Point E is located at -7. Plot Point E on the number line below.



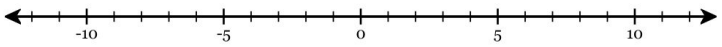
143. Point X is located at -12. Plot Point X on the number line below.



144. Point E is located at -2. Plot Point E on the number line below.



145. Point D is located at -2. Plot Point D on the number line below.



146. Write the numbers below in order from least to greatest. Use commas to separate.

$\boxed{-14}$ $\boxed{-1}$ $\boxed{-17}$ $\boxed{-7}$ $\boxed{-16}$ $\boxed{2}$

147. Write the numbers below in order from least to greatest. Use commas to separate.

$\boxed{-9}$ $\boxed{-12}$ $\boxed{-4}$ $\boxed{20}$ $\boxed{-13}$ $\boxed{-7}$

148. Write the numbers below in order from least to greatest. Use commas to separate.

$\boxed{-12}$ $\boxed{-1}$ $\boxed{-20}$ $\boxed{-5}$ $\boxed{-18}$ $\boxed{3}$

149. Write the numbers below in order from least to greatest. Use commas to separate.

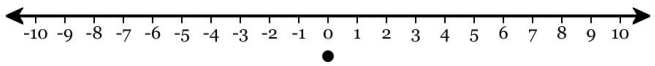
$\boxed{6}$ $\boxed{-14}$ $\boxed{-17}$ $\boxed{-10}$ $\boxed{-12}$ $\boxed{-19}$

150. Write the numbers below in order from least to greatest. Use commas to separate.

$\boxed{7}$ $\boxed{-19}$ $\boxed{-8}$ $\boxed{-4}$ $\boxed{-6}$ $\boxed{4}$

151. Find the result graphically. Start from 0 and draw a series of jumps in a positive or negative direction to find the final answer.

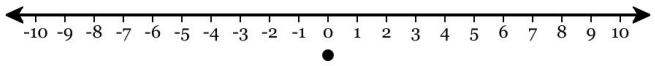
$$3 + (-7)$$



$3 + (-7) =$ ____

152. Find the result graphically. Start from 0 and draw a series of jumps in a positive or negative direction to find the final answer.

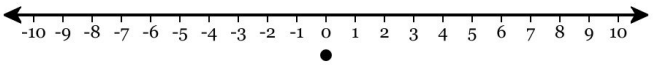
$$-1 + 8$$



$-1 + 8 =$ ____

153. Find the result graphically. Start from 0 and draw a series of jumps in a positive or negative direction to find the final answer.

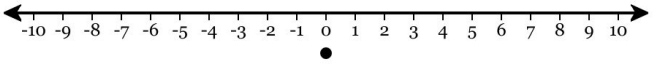
$$-2+(-4)$$



$$-2+(-4)=\_\_\_\_$$

154. Find the result graphically. Start from 0 and draw a series of jumps in a positive or negative direction to find the final answer.

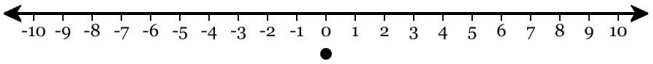
$$1+9$$



$$1+9=\_\_\_\_$$

155. Find the result graphically. Start from 0 and draw a series of jumps in a positive or negative direction to find the final answer.

$$-2+(-7)$$



$$-2+(-7)=\_\_\_\_$$

156. Use addition to rewrite the subtraction expression below *without changing the digits*. Do not solve.

$$16-17$$

157. Use addition to rewrite the subtraction expression below *without changing the digits*. Do not solve.

$$-1-9$$

158. Use addition to rewrite the subtraction expression below *without changing the digits*. Do not solve.

$$17-(-20)$$

159. Use addition to rewrite the subtraction expression below *without changing the digits*. Do not solve.

$$-2-(-10)$$

160. Use addition to rewrite the subtraction expression below *without changing the digits*. Do not solve.

$$-2-1$$

161. Compute:

$$7-10$$

162. Compute:

$$-9-6$$

163. Compute:

$$-1-(-1)$$

164. Compute:

$$11 + (-8)$$

165. Compute:

$$-4 + (-9)$$

166. Simplify the expression below using order of operations.

$$4^3 - 4 \div 2^2 \times 8$$

167. Simplify the expression below using order of operations.

$$(6 \times 5^2) + 2^3 \times 3$$

168. Simplify the expression below using order of operations.

$$10 + \frac{3^3}{(2^3 - 5)}$$

169. Simplify the expression below using order of operations.

$$\frac{(3^3 - 7)}{5} + 8$$

170. Simplify the expression below using order of operations.

$$\frac{(5^2 - 7^1)}{6} - 1$$