

**7th - Take home exercises**

1. -----Day 1-----

To which subset(s) of rational numbers does the number 166 belong? Choose the best answer.

- a. integers
  - b. integers, whole numbers
  - c. integers, whole numbers, natural numbers
  - d. whole numbers
2. Write  $19\frac{3}{5}$  in decimal form.
- a. 1.96
  - b. 19.6
  - c. 19.8
  - d. 0.051
3. What is the additive inverse of  $11\frac{2}{5}$ ?
- a.  $11\frac{2}{5}$
  - b.  $\frac{5}{57}$
  - c.  $-11\frac{2}{5}$
  - d.  $-\frac{5}{57}$
4. What is the absolute value of 6.49?
- a. 3.245
  - b. 6.49
  - c. 6
  - d. -6.49
5. Simplify  $\frac{35}{49}$ .
- a.  $\frac{4}{7}$
  - b.  $\frac{5}{7}$
  - c.  $\frac{5}{8}$
  - d.  $\frac{5}{6}$

6. Which fraction below is NOT equivalent to  $\frac{1}{2}$ ?
- a.  $\frac{3}{6}$
  - b.  $\frac{5}{10}$
  - c.  $\frac{4}{8}$
  - d.  $\frac{5}{12}$
7. Write 19.25 in fraction form.
- a.  $19\frac{1}{4}$
  - b.  $19\frac{3}{8}$
  - c.  $19\frac{1}{8}$
  - d.  $9\frac{5}{8}$
8. What is the least common multiple (LCM) of 24 and 32?
- a. 192
  - b. 32
  - c. 8
  - d. 96
9. What is the least common denominator (LCD) of  $\frac{5}{8}$  and  $\frac{10}{44}$ ?
- a. 4
  - b. 88
  - c. 176
  - d. 44
10. Estimate  $-2\frac{11}{17}$  to the nearest integer.
- a. -2
  - b. -5
  - c. -4
  - d. -3

11. Estimate using front-end estimation:  $-4\frac{7}{20} + 10\frac{2}{3}$ .

- a. 7
- b. 6
- c. -14
- d. 4

12. Add:  $-9.8 + (-8.1)$ .

- a. -17.9
- b. -1.7
- c. -16.8
- d. -17.4

13. Find the sum:  $\frac{3}{8} + \left(-\frac{1}{4}\right)$ .

- a.  $-\frac{5}{8}$
- b.  $\frac{1}{8}$
- c.  $\frac{5}{8}$
- d.  $-\frac{1}{8}$

14. Find the sum:  $-1\frac{1}{3} + \left(-3\frac{11}{12}\right)$ .

- a.  $5\frac{1}{4}$
- b.  $-2\frac{7}{12}$
- c.  $2\frac{7}{12}$
- d.  $-5\frac{1}{4}$

15. Subtract:  $2.5 - (-18.9)$ .

- a. 21.1
- b. -16.4
- c. 21.4
- d. 20.5

20. Write  $2 \bullet 2 \bullet 2 \bullet 2 \bullet 2 \bullet 2 \bullet 2$  in exponential form.

- a.  $7 \bullet 2$
- b.  $2^8$
- c.  $2^7$
- d.  $2^6$

16. Find the difference:  $-\frac{7}{8} - \left(-\frac{7}{10}\right)$ .

- a.  $-1\frac{23}{40}$
- b.  $-\frac{7}{40}$
- c.  $1\frac{23}{40}$
- d.  $\frac{7}{40}$

17. Find the difference:  $2\frac{1}{8} - 2\frac{3}{10}$ .

- a.  $-\frac{7}{40}$
- b.  $4\frac{17}{40}$
- c.  $\frac{7}{40}$
- d.  $-4\frac{17}{40}$

18. Find the quotient:  $-3\frac{1}{2} \div 3.75$ .

- a.  $-\frac{14}{15}$
- b.  $-\frac{7}{8}$
- c.  $-13\frac{1}{8}$
- d.  $-1\frac{1}{15}$

19. Simplify:  $\frac{3\frac{3}{4}}{2\frac{1}{2}}$ .

- a.  $1\frac{1}{2}$
- b.  $1\frac{1}{4}$
- c.  $9\frac{3}{8}$
- d.  $1\frac{3}{5}$

21.

-----Day 2-----

Simplify  $6^4 \cdot 6^5$  using a single exponent.

- a.  $6^9$
- b.  $36^9$
- c.  $36^{20}$
- d.  $6^{20}$

22. Simplify  $\frac{8^2}{8^8}$  using a single exponent.

- a.  $8^6$
- b.  $1^{-6}$
- c.  $1^{0.25}$
- d.  $8^{-6}$

23. Simplify  $\frac{8^6 \cdot 8^5}{8^{-2} \cdot 8^{-4}}$  using a single exponent.

- a.  $17 \cdot 8$
- b.  $8^{17}$
- c.  $8^3$
- d.  $8^9$

24. Simplify  $(6^6)^2$  using a single exponent.

- a.  $12 \cdot 6$
- b.  $6^{12}$
- c.  $6^6$
- d.  $6^8$

25. Simplify  $(-3x^4)^2$ .

- a.  $-6x^4$
- b.  $-6x^6$
- c.  $9x^6$
- d.  $9x^8$

26. Simplify  $\left(\frac{2^6}{c^5}\right)^2$ .

- a.  $\frac{4^6}{2c^5}$
- b.  $\frac{2^{12}}{c^{10}}$
- c.  $\frac{4^6}{c^5}$
- d.  $\frac{2^8}{c^7}$

27. Simplify  $\frac{(4)(-4) - (-68)}{2^2 + 2 + 7}$ .

- a. 9
- b. 4
- c. -3
- d. 12

28. Find the greatest common factor (GCF) of 84 and 40.

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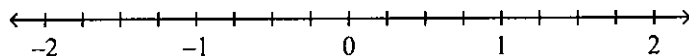
29. Estimate by using compatible numbers:  $56\frac{3}{8} \div 6\frac{21}{25}$ .

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30. Estimate by using rounding:  $3\frac{29}{40} \cdot -5\frac{173}{200}$ .

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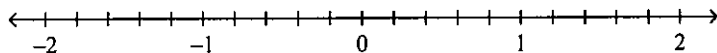
31. Graph the rational number  $-1\frac{3}{4}$  on the number line below.



32. Compare the rational numbers. Write  $<$ ,  $=$ , or  $>$ .

$$\frac{33}{18} \text{ — } \frac{34}{20}$$

33. Use the number line to model  $-1.6 + 0.9$ . Find the sum.



34. Simplify  $\left(\frac{-a^{-2}b^5}{a^3b^2}\right)^{-3}$ .

35. Write  $11 \cdot 11 \cdot 11 \cdot 11$  in exponential form.

- a.  $11^5$   
b.  $4 \cdot 11$

- c.  $11^3$   
d.  $11^4$

36. Write 87,100,000 in scientific notation.

- a.  $8.71 \times 10^7$   
b.  $87.1 \times 10^{-6}$   
c.  $8.71 \times 10^{-7}$   
d.  $87.1 \times 10^6$

37. Write  $9.77 \times 10^7$  in standard form.

- a. 0.000000977  
b. 9,770,000  
c. 97,700,000  
d. 977,000,000

38. Which number is smallest?

- a.  $1.36 \times 10^2$   
b.  $1.86 \times 10^2$   
c.  $1.36 \times 10^5$   
d.  $1.86 \times 10^5$

39. Order from least to greatest.

$$8.22 \times 10^{-3} \quad 1.93 \times 10^{-2} \quad 7.01 \times 10^{-3}$$

- a.  $1.93 \times 10^{-2}$ ,  $8.22 \times 10^{-3}$ ,  $7.01 \times 10^{-3}$   
b.  $7.01 \times 10^{-3}$ ,  $8.22 \times 10^{-3}$ ,  $1.93 \times 10^{-2}$   
c.  $7.01 \times 10^{-3}$ ,  $1.93 \times 10^{-2}$ ,  $8.22 \times 10^{-3}$   
d.  $8.22 \times 10^{-3}$ ,  $7.01 \times 10^{-3}$ ,  $1.93 \times 10^{-2}$

40. Multiply. Write the answer in scientific notation.

$$(5.6 \times 10^{-2})(3.4 \times 10^4)$$

- a.  $1.904 \times 10^{-5}$   
b.  $1.904 \times 10^2$   
c.  $19.04 \times 10^2$   
d.  $1.904 \times 10^3$

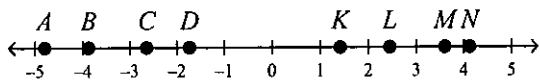
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-----Day 3-----

Divide. Write the answer in scientific notation.

$$\frac{3.6 \times 10^{-1}}{4.8 \times 10^{-4}}$$

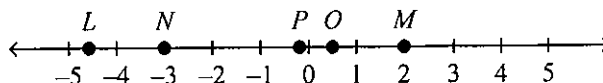
- a.  $7.5 \times 10^3$
  - b.  $0.75 \times 10^3$
  - c.  $7.5 \times 10^2$
  - d.  $7.5 \times 10^{-4}$
42. Which number is a perfect square?
- a. 129
  - b. 37
  - c. 174
  - d. 16
43. Find the principle square root and the negative root of  $\sqrt{81}$ .
- a. 9, -9
  - b. 7, -7
  - c. 8, -8
  - d. 11, -11
44. Tell what two integers  $\sqrt{7}$  is between.
- a. 2 and 3
  - b. 3 and 4
  - c. 1 and 2
  - d. 4 and 5
45. Tell what point on the number line corresponds to  $\sqrt{13}$ .



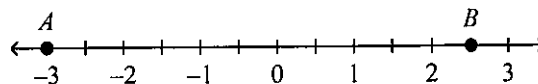
- a. B
  - b. M
  - c. N
  - d. A
46. Find the rational approximate value of  $\sqrt{8}$  to the nearest hundredth.
- a. 3.33
  - b. 2.8
  - c. 2.83
  - d. 2.43

47. Simplify  $\sqrt{128}$

- a.  $8\sqrt{2}$
  - b.  $9\sqrt{3}$
  - c.  $8\sqrt{3}$
  - d.  $9\sqrt{2}$
48. What set or sets of real numbers does  $\sqrt{144}$  belong to?
- a. irrational number
  - b. integer; rational number
  - c. rational number
  - d. natural number; whole number; integer; rational number
49. Which point on the number line is 2?



- a. O
  - b. M
  - c. L
  - d. N
50. Find the coordinate of the midpoint between Point A at -3 and Point B at 2.5.

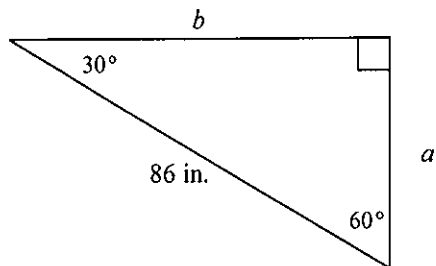


- a. 5.5
- b. -0.25
- c. -5.5
- d. -2.75

51. Find the exact length of the hypotenuse of a  $45^\circ$ - $45^\circ$ - $90^\circ$  triangle with a leg that is 16 ft long.

- a.  $16\sqrt{3}$  ft
- b.  $4.76\sqrt{3}$  ft
- c.  $4.76\sqrt{2}$  ft
- d.  $16\sqrt{2}$  ft

52. Find the exact length of the missing sides.



- a. side  $a = 43$  in.  
side  $b = 43$  in.
- b. side  $a = 43$  in.  
side  $b = 43\sqrt{2}$  in.
- c. side  $a = 43\sqrt{3}$  in.  
side  $b = 43$  in.
- d. side  $a = 43$  in.  
side  $b = 43\sqrt{3}$  in.

*Simplify.*

53.  $(19 - 5)^2 - 10^2$

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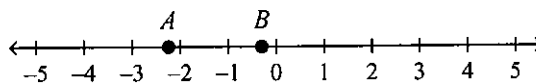
54.  $\frac{\sqrt{100}}{\sqrt{4}} - \sqrt{4}$

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55.  $8.9(4.2 - 4.9)$

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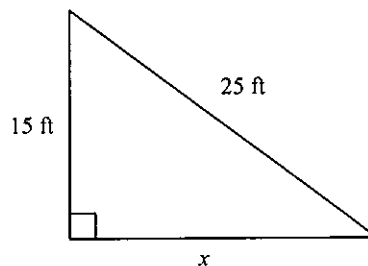
56. Find the distance between point A at  $-\sqrt{5}$  and point B at  $-0.3$ , to the nearest hundredth.



57. Use the properties of real numbers to simplify.  
 $(5 \cdot 11) + (5 \cdot 2)$

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58. Find the length of the missing side, in feet.



59. Write the word phrase as a mathematical expression: the quotient of two and four.

- a.  $\frac{2}{4}$
- b.  $\frac{4}{2}$
- c.  $2 + 4$
- d.  $2 \times 4$

60. Write the algebraic expression as a word phrase:  
 $7n + 4$ .

- a. four more than the product of seven and a number,  $n$
- b. four less than the product of seven and a number,  $n$
- c. the product of seven and the sum of a number,  $n$ , and four
- d. seven more than the product of four and a number,  $n$

61.

-----Day 4-----

Simplify the algebraic expression by combining like terms:  $7a - 3a(2 + 7b)$ .

- a.  $a + 7b$
- b.  $a + 21ab$
- c.  $a + 7b - 21ab$
- d.  $a - 21ab$

62. Evaluate  $\frac{4(x+y)}{4}$  when  $x = -9$  and  $y = -17$ .

- a. -11
- b. -14
- c. -26
- d. 8

63. Solve the equation  $d - 12 = 63$ .

- a.  $d = 75$
- b.  $d = 87$
- c.  $d = 51$
- d.  $d = 47$

64. Solve the equation  $m + 22 = 28$ .

- a.  $m = 50$
- b.  $m = 59$
- c.  $m = 6$
- d.  $m = 16$

65. Solve the equation  $-\frac{1}{10}n = -8$ .

- a.  $n = 83$
- b.  $n = 80$
- c.  $n = 2$
- d.  $n = -18$

66. Solve the equation  $9n = 54$ .

- a.  $n = 45$
- b.  $n = 63$
- c.  $n = 6$
- d.  $n = 4$

67. Solve the equation  $-10x + 14 = -66$ .

- a.  $x = 10$
- b.  $x = 5$
- c.  $x = 8$
- d.  $x = 14$

68. Solve the equation  $-\frac{1}{10}(x - 6) = 8$ .

- a.  $x = -74$
- b.  $x = 24$
- c.  $x = 4$
- d.  $x = -72$

69. Solve the equation  $-8x - 18 = -7x - 22$ .

- a.  $x = 12$
- b.  $x = 4$
- c.  $x = 1$
- d.  $x = 5$

70. Solve the equation  $-4.7x + 8.9 = -6.4x + 7.03$ .

- a.  $x = 5.9$
- b.  $x = -6.1$
- c.  $x = -1.1$
- d.  $x = -0.1$

71. Solve the equation  $\frac{7}{k} = \frac{70}{90}$ .

- a.  $k = 10$
- b.  $k = 9$
- c.  $k = 8$
- d.  $k = 11$

72. Solve the equation  $|x - 6| = -5$ .

- a.  $x = -11, -1$
- b.  $x = -4, 6$
- c.  $x = 8, 18$
- d.  $x = 1, 11$

73. Solve the equation  $|5x + 10| = 20$ .

- a.  $x = -14, -6$
- b.  $x = -1, 7$
- c.  $x = -6, 2$
- d.  $x = -2, 6$

74. Identify the numerical and literal coefficients of each term, and the constant of the algebraic expression.

$$4m - 2n + 8p + 8$$

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75. Adrian is 3 years younger than his sister Meredith. If Meredith is 14 years old, what is Adrian's age? Write an equation to represent the problem.

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76. Determine if  $w = 11$  is a solution of the equation  $-2w + 10 = -11$ . Write *Yes* or *No*.

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77. Solve  $P = 2\ell + 2w$  for  $\ell$ .

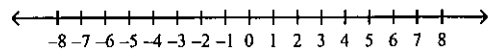
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78. The formula for the area of a triangle is  $A = \frac{1}{2}bh$  where  $b$  is the base and  $h$  is the height of the triangle. If a triangle with a height of 4 inches has an area of 20 square inches, what is the base? Set up and solve an equivalent equation.

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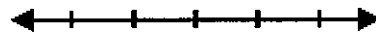
**Graph the solution.**

79.  $x - 2 \geq 2$



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80. Tina can type at least 40 words per minute. Write and graph an inequality to describe this statement.

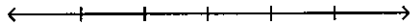




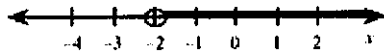
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-----Day 5-----

Jack can run a mile in less than 6.5 minutes. Write and graph an inequality to describe this statement.

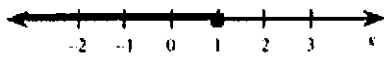


82. Write the inequality illustrated by the graph below.



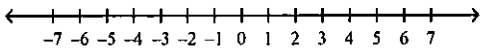
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83. Write the inequality illustrated by the graph below.



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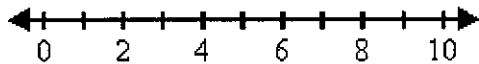
84. Solve  $x + 10 > 11$ . Graph your solution.



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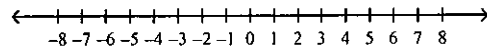
**Solve and graph.**

85.  $12a > 78$



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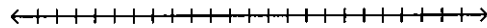
86. Solve the inequality. Graph your solution.  $8x < 24$



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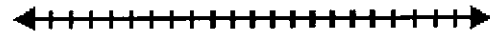
**Solve the inequality. Then graph its solution.**

87.  $-\frac{x}{3} \leq -2$



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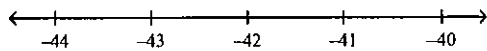
88.  $\frac{m}{4} \leq -3$



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**Solve the inequality. Check and graph the solution.**

89.  $-\frac{x}{7} < 6$



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**Solve the inequality.**

90.  $\frac{1}{5}x < -8$

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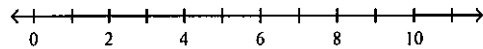
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91.  $-\frac{1}{7}x \geq \frac{3}{14}$

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**Solve and graph.**

92.  $-10w + 5 < -30$



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**Solve.**

93.  $-5x + 5 > 25$

- a.  $x > 25$
- b.  $x < -4$
- c.  $x > -4$
- d.  $x < 25$

94.  $13b - 6 \leq 14b + 8$

- a.  $b \geq 2$
- b.  $b \geq -14$
- c.  $b \leq 14$
- d.  $b = 2$

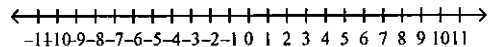
95.  $-5x - 20 < 10$

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96.  $8b - 9 \leq 9b + 2$

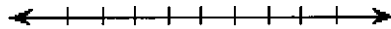
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97. Solve  $-x + 11 > 12$ . Graph your solution.



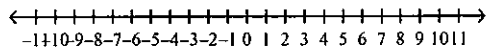
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98. Graph the solution to the inequality "x is greater than 3 or less than or equal to 0."



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99. Solve the inequality  $-2 < 1 + x \leq 2$ . Graph your solution.



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100. Which of the following shows a relation?

- a.  $2w$
- b.  $p + 10$
- c.  $\{(-2, -4), (-5, -5), (-4, -5)\}$
- d.  $\{-4, -5, -5, -2\}$

101.

## -----Day 6-----

Which of the following is a function?

- a.  $\{(5,5), (3,-8), (1,7)\}$   
 b.  $\{5,5,1,7\}$   
 c.  $\{(7,5), (1,5), (7,3)\}$   
 d.  $4x - 5$
102. Which equation represents the following relation:  
 $\{(1,4), (2,3), (3,2), (4,1)\}$ ?
- a.  $y = -x - 5$   
 b.  $y = -x - 6$   
 c.  $y = -x + 5$   
 d.  $y = -x + 6$
103. What is the domain of the relation  
 $\{(0,-6), (-7,7), (-9,4), (-2,8)\}$ ?
- a.  $\{0,-6\}$   
 b.  $\{-6,7,4,8\}$   
 c.  $\{-2,8\}$   
 d.  $\{0,-7,-9,-2\}$
104. What is the range of the relation  
 $\{(0,8), (4,-5), (-6,1), (9,6)\}$ ?
- a.  $\{0,4,-6,9\}$   
 b.  $\{8,-5,1,6\}$   
 c.  $\{0,8\}$   
 d.  $\{9,6\}$
105. Evaluate  $f(x) = 7x + 6$  for  $f(-4)$ . Write the ordered pair to show the correspondence.
- a.  $(-22,-4)$   
 b.  $(-4,-22)$   
 c.  $(6,-22)$   
 d.  $(-4,6)$

106. Find the  $x$ -intercept of the equation  $y = -2x + 3$ . Write the  $x$ -intercept as an ordered pair.

- a.  $(\frac{3}{2}, 0)$   
 b.  $(-2, 0)$   
 c.  $(0, \frac{3}{2})$   
 d.  $(0, 3)$

107. Find the  $y$ -intercept of the equation  $y = 5x + 3$ . Write the  $y$ -intercept as an ordered pair.

- a.  $(5, 0)$   
 b.  $(-\frac{3}{5}, 0)$   
 c.  $(3, 0)$   
 d.  $(0, 3)$

108. Write the equation of a line in standard form, containing the point  $(0,-8)$  and has a slope,  $m = -8$ .

- a.  $-8x + y = -64$   
 b.  $8x + y = -8$   
 c.  $-8x + y = 8$   
 d.  $8x + y = 8$

109. Write an equation for a line that is parallel to  $y = -2x + 3$  and passes through  $(3,8)$ .

- a.  $y = -2x + 14$   
 b.  $y = \frac{1}{2}x + 14$   
 c.  $y = \frac{1}{2}x - 3$   
 d.  $y = -2x + 8$

110. Write an equation for a line that is perpendicular to  $y = \frac{1}{3}x$  and passes through  $(4,-9)$ .

- a.  $y = -3x - 4$   
 b.  $y = \frac{1}{3}x + 9$   
 c.  $y = \frac{1}{3}x + 3$   
 d.  $y = -3x + 3$

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111. Given that  $y$  varies directly as  $x$ , find an equation of direct variation if  $y = 4.4$  when  $x = 8.8$ .

- a.  $x = \frac{1}{2}y$
- b.  $y = \frac{1}{2}x$
- c.  $y = 2x$
- d.  $x = 2y$

112. Which ordered pair is a solution of  $x + 3y > 3$ ?

- a.  $(-1, 1)$
- b.  $(0, 1)$
- c.  $(4, 0)$
- d.  $(2, 0)$

113. Identify the slope of the line  $y = 3x - 2$ .

\_\_\_\_\_

114. Identify the  $y$ -intercept of the line  $y = 2x + 5$ .

\_\_\_\_\_

115. Use the concept of opposites to simplify

$-\{-[-(+7)]\}$ .

- a.  $-7$
- b.  $\frac{1}{7}$
- c.  $7$
- d.  $-\frac{1}{7}$

116. Order the numbers from least to greatest.

$\frac{3}{2}, -10, 0, \frac{2}{3}, -\frac{5}{4}, 1$

\_\_\_\_\_

117. Order the numbers from least to greatest.

$7, -\frac{5}{6}, \frac{2}{3}, 0, -\frac{1}{2}, \frac{4}{5}$

\_\_\_\_\_

118. What is the opposite of 16?

\_\_\_\_\_

119. Arrange the integers 0, 3, -6, 6, -8, 4, -1 in order from *least* to *greatest*.

\_\_\_\_\_

120. Find the product  $8|-10|$ .

\_\_\_\_\_

121.

-----Day 7-----

Find the product  $(-8)|-10|$ .

\_\_\_\_\_

124. What is the mean of the data?

 $-37, -39, -18, 22, 24, -36, -31, 35$ a.  $-10$ b.  $-39$ c.  $0$ d.  $-24.5$ 

125. Dividing by 3 is the same as multiplying by what fraction?

a.  $\frac{1}{4}$ b.  $\frac{2}{3}$ c.  $4$ d.  $\frac{1}{3}$ **Find the quotient.**126.  $8 \div 2\frac{2}{3}$ a.  $3$ b.  $21\frac{1}{3}$ c.  $\frac{2}{3}$ d.  $\frac{3}{64}$ 127. Evaluate  $\frac{x}{y}$  when  $x = 40$  and  $y = -8$ .

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**Simplify the expression.**122.  $10(-2c)$ 

\_\_\_\_\_

123.  $4(6x)$ 

\_\_\_\_\_

**Solve the equation.**128.  $10x + 2 = 72$ a.  $74$ b.  $4$ c.  $7$ d.  $70$ 129.  $\frac{2}{16}y - 65 = 0$ a.  $520$ b.  $2080$ c.  $-520$ d.  $-2080$ **Solve the equation. Check your solution.**130.  $3x + 5 = 26$ 

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131.  $4x + 8 = 21$

\_\_\_\_\_

132.  $10x + 2 = 22$

\_\_\_\_\_

133.  $\frac{r}{16} + 5 = 11$

\_\_\_\_\_

134.  $\frac{4}{10}y + 28 = 0$

\_\_\_\_\_

135.  $7n + 23 + 5n = 59$

\_\_\_\_\_

**Solve the equation.**

136.  $-3x + 25 + x + 21 = 2$

- a. 22
- b. -3
- c. -22
- d. 3

137.  $\frac{25x}{5} - 7x = 12$

\_\_\_\_\_

138.  $\frac{9x}{3} + 11x = 28$

\_\_\_\_\_

139.  $5n - 2(n - 2) = -11$

\_\_\_\_\_

140.  $4n - 2(3 - n) = -13$

\_\_\_\_\_

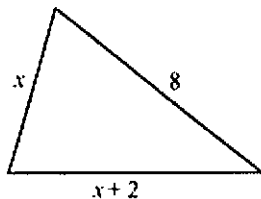
141.

-----Day 8-----

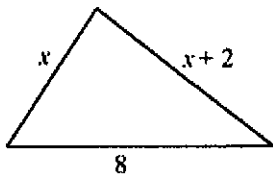
The perimeter of a rectangular garden is 690 ft. The two long sides of the garden are each 270 ft long. You are asked to find the length of the other sides. Which equation models this situation?

- a.  $270 + 2x = 690$
- b.  $2(270) + 2x = 690$
- c.  $270 + x = 690$
- d.  $270(x - 2) = 690$

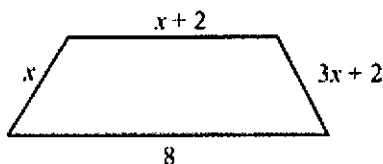
142. The triangle below has a perimeter of 20. Solve for  $x$ .



143. The triangle below has a perimeter of 23.2. Solve for  $x$ .



144. The trapezoid below has a perimeter of 20. Solve for  $x$ .



145. Valerie sold 42 tickets to the school play and Mark sold 24 tickets. What is the ratio of the number of tickets Valerie sold to the number of tickets Mark sold?

- a. 7 to 4
- b. 6 to 4
- c. 24 to 42
- d. 6 to 7

146. A bus travels 300 miles on 12 gallons of gas. At this rate, how many gallons will it need to travel 650 miles?

- a. 25 gallons
- b. 26 gallons
- c. 5.5 gallons
- d. 28 gallons

147. A cyclist can travel 29.6 miles in 2 hours. At this rate, how far can the same cyclist travel in 45 minutes?

- a. 14.8 miles
- b. 22.2 miles
- c. 11.1 miles
- d. 16.2 miles

148. A nonstop bus ride from the bus station in Atlantic City, New Jersey, to the bus station in Albany, New York, took 6 hours. If the average speed of the bus was 21 meters per second, what is the distance between the two bus stations, to the nearest kilometer?

- a. 756 kilometers
- b. 454 kilometers
- c. 126 kilometers
- d. 350 kilometers

Solve.

149. Raul uses 6.97 pounds of ground beef to make a casserole that serves 17 people. How many pounds would he need to make the casserole for 13 people?

\_\_\_\_\_

150. A worker on an assembly line takes 3 hours to produce 22 parts. At this rate, how many parts can the worker produce in 15 hours?

\_\_\_\_\_

151.

Linda walked for 20 minutes at an average rate of 3.6 miles per hour. How many feet did she walk?

\_\_\_\_\_

152. Bob is able to complete 4 party invitations in 15 minutes. At this rate, how long, in hours, will it take him to complete 18 invitations? Write your answer as a decimal.

\_\_\_\_\_

153. What percent of 12 is 6?

- a. 0.5%
- b.  $\frac{1}{2}\%$
- c. 2%
- d. 50%

154. Of every 5 hot dogs Martha sold, 3 had sauerkraut. What percent of the hot dogs sold had sauerkraut?

- a. 6%
- b.  $\frac{3}{5}\%$
- c. 60%
- d. 0.6%

155. Estimate the grade received on a test when 24 questions are answered correctly out of 40.

- a. 60%
- b. 76%
- c. 16%
- d. 24%

156. The number of subscribers to a newsletter decreased from 1700 to 1088. What was the percent of decrease in circulation?

- a. 64%
- b. 156%
- c. 3.6%
- d. 36%

157. What is the domain of the relation  $\{(0, 4), (4, 9), (5, 2), (10, 4)\}$

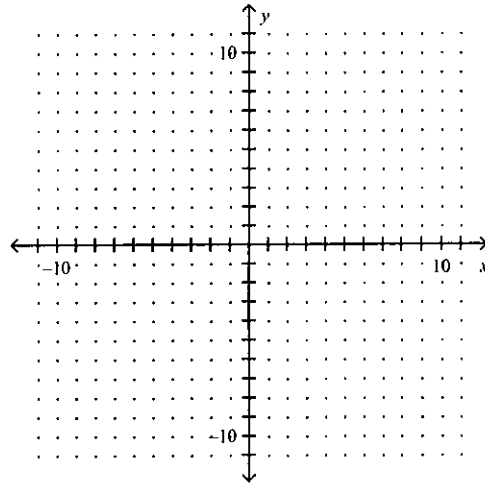
- a. 0, 2, 9, 10
- b. 0, 2, 4, 10
- c. 0, 4, 9, 10
- d. 0, 4, 5, 10

158. Which point,  $\left(\frac{5}{2}, 3\right)$  or  $\left(\frac{3}{2}, 20\right)$ , is on the graph of  $2x - \frac{2}{3}y = 3$ ?

159. Complete the table. Then graph the function.

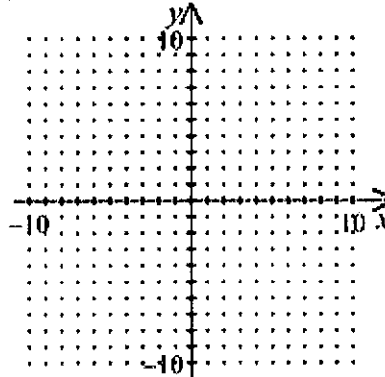
$$y = \frac{7}{8}x - 1$$

x	-3	-2	0	2	3
y	?	?	?	?	?



**Graph the function.**

160.  $y = -2x$





## -----Day 9-----

Identify the domain and range of the relation.

161.  $(1, 3), (2, 6), (3, 9), (4, 12), (5, 15)$

162. Find the slope of the line passing through the points  $A(-1, 1)$  and  $B(4, -5)$ .

a.  $-\frac{6}{5}$

b.  $\frac{4}{3}$

c.  $\frac{3}{4}$

d.  $-\frac{5}{6}$

163. Find the slope of the line that contains  $(-8, 2)$  and  $(7, -4)$ .

a.  $-\frac{2}{5}$

b.  $-\frac{5}{2}$

c. 0

d. undefined

164. Choose an equation, in slope-intercept form, of a line with a slope 7 and a  $y$ -intercept of  $-9$ .

a.  $y = 7x - 9$

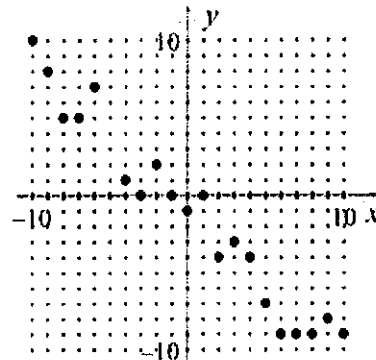
b.  $y = 7x + 9$

c.  $x = 7y - 9$

d.  $y = \frac{1}{7}x - 9$

165. Write an equation of the line with slope  $-\frac{3}{2}$  and  $y$ -intercept  $-5$ .

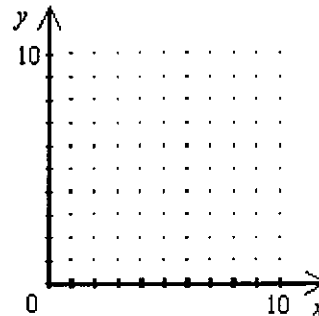
166. What type of relationship is shown by the scatter plot?



- a. relatively no correlation  
 b. strong negative correlation  
 c. weak positive correlation  
 d. strong positive correlation

167. Make a scatter plot of the data in the table. Draw a line of fit. Write an equation of the line.

$x$	1	2	6	8	10
$y$	3	4	6	4	6



168. Solve the system by substitution:

$y = x + 8$

$y = 9x$

- a.  $(1, 9)$   
 b.  $(-1, 7)$   
 c.  $(0, 8)$   
 d.  $(-7, -63)$

169. Solve by substitution:

$$3x + 2y = -4$$

$$y = 4x - 2$$

- a.  $(0, -2)$
- b. no solution
- c.  $(2, 6)$
- d.  $(-1, -\frac{1}{2})$

170. Solve the system by substitution:  $y = 3x + 3$   
 $y = 2x$ **Solve by elimination:**

171.  $3x + 6y = 9$

$x - 6y = 11$

- a.  $(5, -1)$
- b.  $(0, \frac{3}{2})$
- c.  $(10, -\frac{1}{6})$
- d. no solution

172.  $3x - 4y = 5$   
 $5x + 4y = -13$

173. Solve the system using the addition method:

$2x - 4y = 12$

$3x + 4y = 8$

- a.  $(4, -1)$
- b. no solution
- c.  $(20, -1)$
- d.  $(0, -3)$

**Solve the system:**

174.  $4x + 4y = -12$

$3x - 4y = -23$

- a.  $(-32, 3)$
- b.  $(0, -3)$
- c. no solution
- d.  $(-5, 2)$

175.  $2x + 4y = -3$   
 $4x - 4y = 6$

176. Solve the system by adding or subtracting.

$-3x - 3y = 9$

$3x + 8y = 6$

177. Which measurement is most precise?

- a. 8.053 grams
- b. 8 grams
- c. 8.05 grams
- d. 8.1 grams

178. An insect weighed 6.5 grams. What is the GPE of the measurement?

- a. 0.5 grams
- b. 0.05 grams
- c. 0.0005 grams
- d. 0.005 grams

179. What is the perimeter of a regular heptagon with a side length of 13 feet?

- a. 78 feet
- b. 65 feet
- c. 91 feet
- d. 104 feet

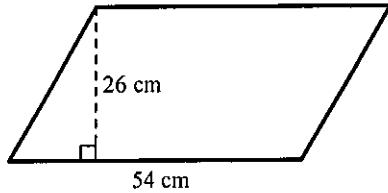
180. Find the width of a rectangle if the perimeter = 320 cm and the length = 72 cm?

- a. 44 cm
- b. 124 cm
- c. 176 cm
- d. 88 cm

181.

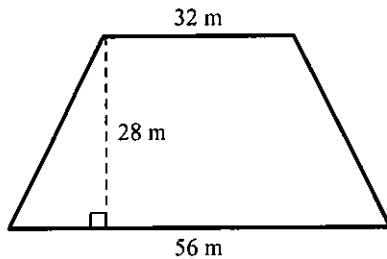
-----Day 10-----

Find the area of the parallelogram.



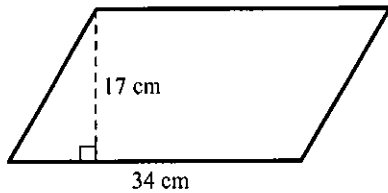
- a.  $160 \text{ cm}^2$
- b.  $1304 \text{ cm}^2$
- c.  $1404 \text{ cm}^2$
- d.  $104 \text{ cm}^2$

182. Find the area of the trapezoid.



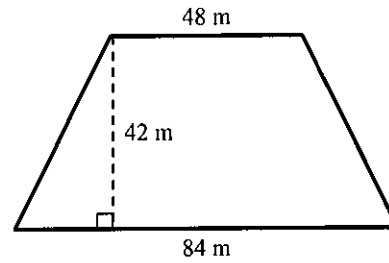
- a.  $1222 \text{ m}^2$
- b.  $784 \text{ m}^2$
- c.  $448 \text{ m}^2$
- d.  $1232 \text{ m}^2$

183. Find the area of the parallelogram.



- a.  $578 \text{ cm}^2$
- b.  $102 \text{ cm}^2$
- c.  $568 \text{ cm}^2$
- d.  $68 \text{ cm}^2$

184. Find the area of the trapezoid.

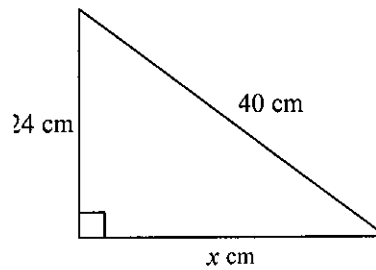


- a.  $1764 \text{ m}^2$
- b.  $2672 \text{ m}^2$
- c.  $2772 \text{ m}^2$
- d.  $1008 \text{ m}^2$

185. What is the greatest possible error (GPE) of 32.5 in.?

- a. 1 in.
- b.  $\frac{1}{2}$  in.
- c.  $\frac{1}{4}$  in.
- d.  $\frac{1}{4}$  ft

186. Find the missing side to the nearest tenth.



- a. 30 cm
- b. 33 cm
- c. 32 cm
- d. 31 cm

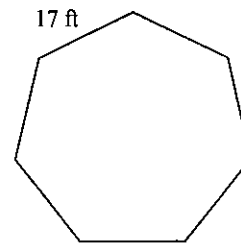
187. Which of the following given side lengths is a right triangle?

- a. 16 in., 12 in., 20 in.
- b. 16 in., 12 in., 21 in.
- c. 11 in., 16 in., 20 in.
- d. 16 in., 20 in., 21 in.

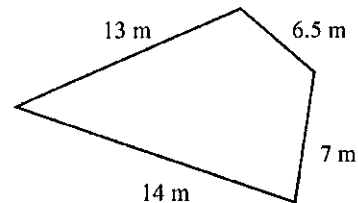
188. A parallelogram has a base of 9 ft and a height of 8 ft. What would the area of the parallelogram be if the base were tripled?
- 216 ft<sup>2</sup>
  - 52 ft<sup>2</sup>
  - 243 ft<sup>2</sup>
  - 72 ft<sup>2</sup>
189. A parallelogram has a base of 15 cm and a height of 2 cm. What would the area of the parallelogram be if the height were tripled?
- 38 cm<sup>2</sup>
  - 90 cm<sup>2</sup>
  - 96 cm<sup>2</sup>
  - 30 cm<sup>2</sup>
190. A parallelogram has a height of 10 cm and an area of 400 cm<sup>2</sup>. What is the length of the base?
- 190 cm
  - 41 cm
  - 20 cm
  - 40 cm
191. Find the area of a parallelogram with a base of 16 yd and a height of 35 yd.
- 51 yd<sup>2</sup>
  - 280 yd<sup>2</sup>
  - 102 yd<sup>2</sup>
  - 560 yd<sup>2</sup>
192. A parallelogram has a base of 9 ft and a height of 5 ft. Find the area of the parallelogram in square inches.
- 540 in.<sup>2</sup>
  - 45 in.<sup>2</sup>
  - 28 in.<sup>2</sup>
  - 6480 in.<sup>2</sup>
193. What is the area of a triangle with a base of 18 in. and a height of 39 in.?
- 57 in.<sup>2</sup>
  - 351 in.<sup>2</sup>
  - 175.5 in.<sup>2</sup>
  - 702 in.<sup>2</sup>
194. A triangle has an area of 207 mm<sup>2</sup> and a height of 23 mm. What is the base?
- 9 mm
  - 184 mm
  - 196 mm
  - 18 mm

195. A trapezoid has an area of 276 cm<sup>2</sup> and a height of 12 cm. If one base measures 29 cm, what is the measure of the other base?
- 52 cm
  - 46 cm
  - 11.5 cm
  - 17 cm
196. What is the circumference of a circle with a radius of 6 in.? Use 3.14 for pi.
- 37.68 in.
  - 113.04 in.
  - 9.42 in.
  - 18.84 in.

197. What is the perimeter of the regular heptagon in kilometers?



198. What is the perimeter of this figure in meters?



199. A parallelogram has a base of 4 m and an area of 240 m<sup>2</sup>. What is the height in meters?
- \_\_\_\_\_
200. A parallelogram has a base of 31 ft and an area of 1488 ft<sup>2</sup>. What is the height in feet?
- \_\_\_\_\_