

## Algebra 2 Summer Review Work 2018

### Multiple Choice

Identify the choice that best completes the statement or answers the question.

**Write the decimal as a percent.**

- \_\_\_\_\_ 1. 0.036  
a. 3.6%                      b. 36%                      c. 37%                      d. 3.7%

**Write the percent as a decimal.**

- \_\_\_\_\_ 2. 28%  
a. 0.29                      b. 2.8                      c. 2.9                      d. 0.28

**Use an equation to solve the percent problem.**

- \_\_\_\_\_ 3. Sales tax in one state is 4%. What is the amount of tax on a \$56.70 purchase?  
a. \$56.74                      b. \$2.27                      c. \$4.57                      d. \$22.68
- \_\_\_\_\_ 4. There are 1,282 people under the age 20 in Pierce City. This represents 19% of the total population. What is the total population?  
a. 6,747 people                      c. 12,820 people  
b. 24,358 people                      d. 6,897 people
- \_\_\_\_\_ 5. What percent of 380 is 190?  
a. 50%                      c. 5%  
b. 7%                      d. 70%

**Perform the indicated operation WITHOUT A CALCULATOR.**

- \_\_\_\_\_ 6.  
 $\frac{1}{8} \cdot \frac{6}{13}$   
a.  $17\frac{1}{3}$                       b.  $\frac{3}{4}$                       c.  $\frac{8}{13}$                       d.  $\frac{3}{52}$
- \_\_\_\_\_ 7.  $\frac{7}{8} + \frac{1}{6}$   
a.  $\frac{25}{24}$                       b.  $\frac{24}{25}$                       c.  $\frac{7}{48}$                       d.  $\frac{5}{16}$
- \_\_\_\_\_ 8.  $\frac{3}{8} - \frac{1}{6}$   
a.  $\frac{11}{48}$                       b.  $\frac{1}{16}$                       c.  $\frac{5}{24}$                       d.  $\frac{24}{13}$

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- \_\_\_\_\_ 9.  $\frac{2}{3} \div \frac{3}{6}$   
a.  $\frac{4}{3}$                       b. 1                      c.  $\frac{3}{4}$                       d.  $\frac{1}{3}$

**Write the ratio or rate in simplest form. YOU MAY USE A CALCULATOR.**

- \_\_\_\_\_ 10. Write 336 mi in 11.2 h as a rate in simplest form.  
a. 45 mi/h                      b. 30 mi/h                      c. 35 mi/h                      d. 40 mi/h

**Solve the proportion.**

- \_\_\_\_\_ 11.  $\frac{5}{8} = \frac{h}{40}$   
a.  $\frac{1}{64}$                       b. 1                      c. 10                      d. 25

- \_\_\_\_\_ 12.  $\frac{60}{k} = \frac{20}{3}$   
a. 98                      b. 100                      c. 9                      d. 11

- \_\_\_\_\_ 13. A fruit stand charges \$3 for 4 pounds of assorted fruits. How much would 20 pounds of assorted fruits cost?  
a. \$15                      b. \$8                      c. \$16                      d. \$21

**Simplify the expression WITHOUT A CALCULATOR.**

- \_\_\_\_\_ 14.  $-1 + (-2)$   
a. 1                      b. 3                      c. -3                      d. -1

- \_\_\_\_\_ 15.  $-2 + 7$   
a. 5                      b. -5                      c. 9                      d. -9

- \_\_\_\_\_ 16.  $1 - (-2)$   
a. -3                      b. -1                      c. 3                      d. 1

- \_\_\_\_\_ 17.  $4 \cdot (-4)$   
a. -16                      b. 2                      c. 16                      d. 0

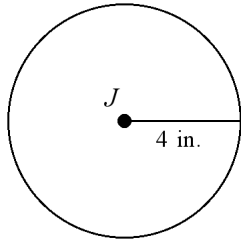
- \_\_\_\_\_ 18.  $-42 \div (-7)$   
a. -49                      b. -6                      c. 49                      d. 6

- \_\_\_\_\_ 19.  $2^2 - 3(2+4) + 13$   
a. -19                      b. -1                      c. 15                      d. 9

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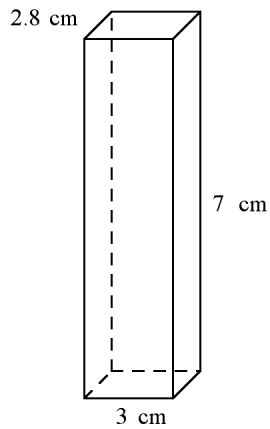
Find the area of the figure. YOU MAY USE A CALCULATOR.

\_\_\_\_\_ 20.



- a.  $25 \text{ in.}^2$       b.  $33 \text{ in.}^2$       c.  $50 \text{ in.}^2$       d.  $66 \text{ in.}^2$

Find the volume of the figure.



\_\_\_\_\_ 21.

Not drawn to scale

- a.  $21 \text{ cm}^3$       b.  $117.6 \text{ cm}^3$       c.  $98 \text{ cm}^3$       d.  $58.8 \text{ cm}^3$

\_\_\_\_\_ 22. In which quadrant is the point  $(7, 5)$ ?

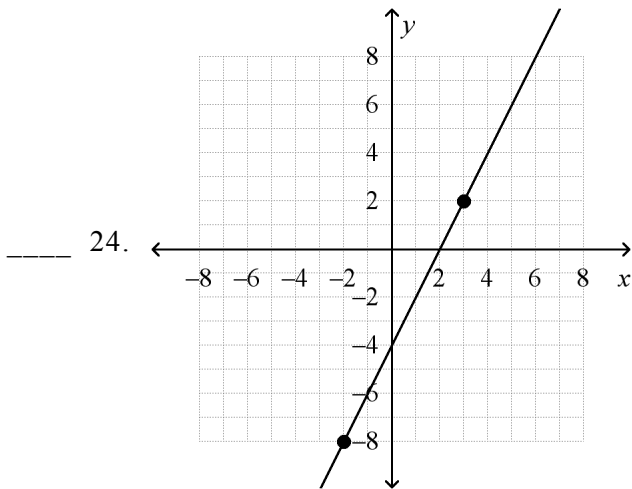
- a. II      b. IV      c. III      d. I

\_\_\_\_\_ 23. In which quadrant is the point  $(-7, -6)$ ?

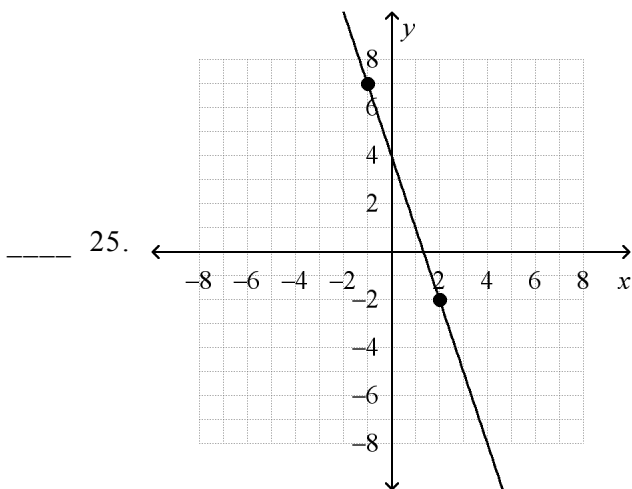
- a. III      b. IV      c. I      d. II

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Find the slope of the line.



- a.  $\frac{1}{2}$       b. 2      c.  $-\frac{1}{6}$       d. -6



- a. 5      b.  $-\frac{1}{3}$       c.  $\frac{1}{5}$       d. -3

\_\_\_\_\_ 26. Find the slope of the line containing the points  $(-2, 7)$  and  $(3, -3)$ .

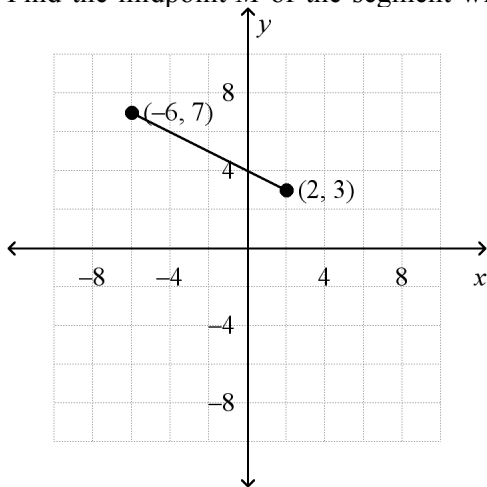
- a.  $-\frac{1}{2}$       b. -2      c.  $\frac{1}{4}$       d. 4

\_\_\_\_\_ 27. Find the midpoint  $M$  of the segment with endpoints  $C(6, 2)$  and  $D(-2, -4)$ .

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

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\_\_\_\_\_ 28. Find the midpoint  $M$  of the segment with the endpoints shown.



- a.  $M(-4, 5)$       b.  $M(-2, 10)$       c.  $M(-2, 5)$       d.  $M(-4, 10)$

**Write the expression using exponents.**

\_\_\_\_\_ 29.  $x \cdot x \cdot x \cdot x$

- a.  $x^4$       c.  $4x^4$   
b.  $4x$       d.  $x + 4$

\_\_\_\_\_ 30.  $a \cdot a \cdot a \cdot a \cdot a \cdot b \cdot b \cdot b$

- a.  $a^5 b^3$       c.  $5a^5 b^3$   
b.  $15ab$       d.  $ab + 15$

\_\_\_\_\_ 31.  $\frac{2 \cdot 2 \cdot 2}{x \cdot x \cdot x \cdot x \cdot x}$

- a.  $2^3 x^5$       c.  $\frac{6}{x^5}$   
b.  $\frac{2^3}{x^5}$       d.  $\frac{6}{5x}$

**Write the expression so that all exponents are positive.**

\_\_\_\_\_ 32.  $s^{-7}$

- a.  $s^7$       c.  $\frac{1}{s^7}$   
b.  $\frac{s}{8}$       d.  $1 - s^7$

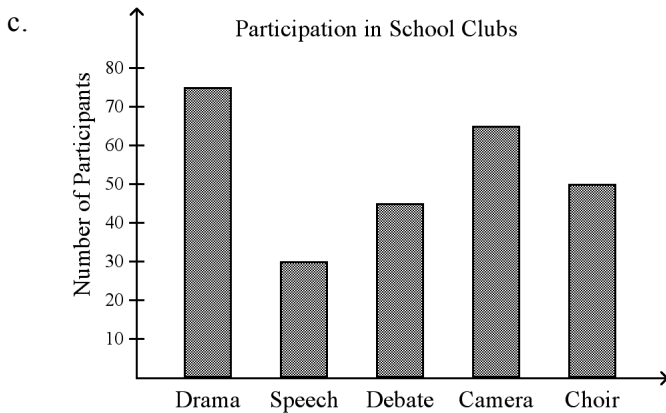
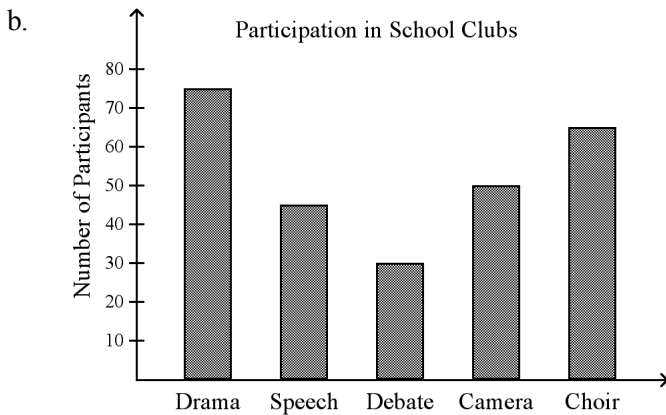
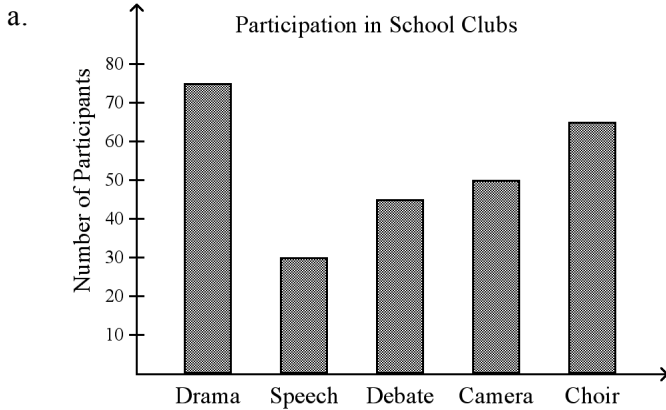




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49. Which of the following bar graphs shows the number of participants in various school clubs as listed below?

Drama	Speech	Debate	Camera	Choir
75	30	45	50	65



d. none of these





Name: \_\_\_\_\_

**What is the solution of each equation?**

- \_\_\_\_\_ 59.  $2 + 3z = 5 + 3z$   
a.  $-\frac{1}{2}$  c. no solution  
b. infinitely many solutions d.  $2\frac{1}{3}$
- \_\_\_\_\_ 60. Is 112 prime or composite?  
a. composite b. prime

**Find the greatest common factor of the numbers.**

- \_\_\_\_\_ 61. 14 and 38  
a. 5 b. 6 c. 2 d. 4

**Find the least common multiple of the set of numbers.**

- \_\_\_\_\_ 62. 5 and 20  
a. 20 b. 100 c. 10 d. 30
- \_\_\_\_\_ 63. Identify the fraction that is equivalent to  $\frac{5}{7}$ .  
a.  $\frac{25}{28}$  b.  $\frac{20}{35}$  c.  $\frac{30}{35}$  d.  $\frac{25}{35}$

**Write the fraction in simplest form.**

- \_\_\_\_\_ 64.  $\frac{14}{24}$   
a.  $\frac{7}{13}$  b.  $\frac{2}{3}$  c.  $\frac{7}{12}$  d.  $\frac{6}{11}$

**Write as a decimal.**

- \_\_\_\_\_ 65.  $4\frac{1}{12}$   
a. 16 b.  $0.\overline{3}$  c.  $4.0\overline{83}$  d.  $0.0\overline{83}$

**Write as a fraction in simplest form.**

- \_\_\_\_\_ 66. 0.32  
a.  $\frac{32}{99}$  b.  $\frac{3}{10}$  c.  $\frac{8}{25}$  d.  $\frac{99}{32}$

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**What is an algebraic expression for the word phrase?**

- \_\_\_\_\_ 67. the sum of  $n$  and 9  
a.  $n - 9$                       b.  $n + 9$                       c.  $\frac{n}{9}$                       d.  $9n$
- \_\_\_\_\_ 68. the difference of  $r$  and 3  
a.  $\frac{r}{3}$                       b.  $r + 3$                       c.  $r - 3$                       d.  $3r$
- \_\_\_\_\_ 69. the product of  $g$  and 4  
a.  $4g$                       b.  $g + 4$                       c.  $\frac{g}{4}$                       d.  $g - 4$
- \_\_\_\_\_ 70. Evaluate  $u + xy$ , for  $u = 18$ ,  $x = 10$ , and  $y = 8$ .  
a. 188                      b. 36                      c. 98                      d. 224

**What is the simplified form of each expression?**

- \_\_\_\_\_ 71.  $\sqrt{169}$   
a. 338                      b. 84.5                      c. 12                      d. 13
- \_\_\_\_\_ 72.  $\sqrt{\frac{25}{100}}$   
a.  $\frac{1}{20}$                       b.  $\frac{1}{2}$                       c. 20                      d.  $\frac{5}{2}$
- \_\_\_\_\_ 73. What is the order of  $\sqrt{5}$ ,  $-0.1$ ,  $-\frac{5}{3}$ ,  $0.7$ ,  $\sqrt{2}$  from least to greatest?  
a.  $0.7, \sqrt{2}, -\frac{5}{3}, \sqrt{5}, -0.1$                       c.  $-\frac{5}{3}, -0.1, 0.7, \sqrt{2}, \sqrt{5}$   
b.  $\sqrt{5}, \sqrt{2}, 0.7, -\frac{5}{3}, -0.1$                       d.  $-0.1, 0.7, \sqrt{2}, \sqrt{5}, -\frac{5}{3}$

**Simplify each expression.**

- \_\_\_\_\_ 74.  $\frac{4sg}{-5g}$   
a.  $-\frac{4}{5}s$                       c.  $-\frac{5}{4}s$   
b.  $\frac{4}{5}g$                       d.  $-\frac{5}{4}g$

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**What is the simplified form of each expression?**

\_\_\_\_\_ 75.  $\frac{1}{3}(21m + 27)$

- a.  $63m + 9$   
b.  $7m + 9$

- c.  $7m + 81$   
d.  $7m + 27$

\_\_\_\_\_ 76.  $(2 - 9c)(-8)$

a.  $-16 + 72c$

b.  $16 + 72c$

c.  $-16 - 72c$

d.  $16 - 72c$

**What sum or difference is equivalent to the expression?**

\_\_\_\_\_ 77.  $\frac{3x+2}{8}$

a.  $\frac{3}{8}x + \frac{1}{4}$

b.  $\frac{1}{4}x + \frac{3}{8}$

c.  $\frac{5}{8}x$

d.  $\frac{1}{4}$

**What is the simplified form of each expression?**

\_\_\_\_\_ 78.  $-(8d - 3w)$

a.  $8d - 3w$

b.  $-8d + 3w$

c.  $8d + 3w$

d.  $-8d - 3w$

\_\_\_\_\_ 79. Simplify the expression  $6ab + 3ab - 7ab$ . What is the coefficient of the simplified expression?

a.  $a$

b.  $ab$

c.  $2$

d.  $b$

**What inequality represents the verbal expression?**

\_\_\_\_\_ 80. all real numbers greater than or equal to 67

a.  $x \geq 67$

b.  $x < 67$

c.  $x \leq 67$

d.  $x > 67$

\_\_\_\_\_ 81. 8 less than a number  $n$  is less than 11

a.  $11 - 8 < n$

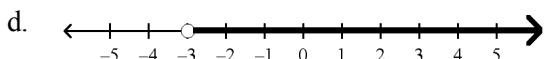
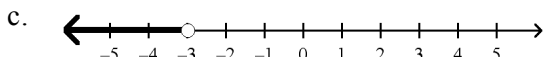
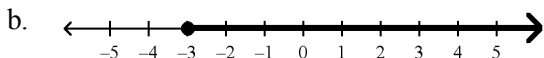
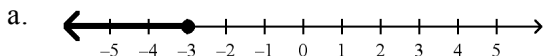
c.  $8 - n < 11$

b.  $n - 8 < 11$

d.  $11 < 8 - n$

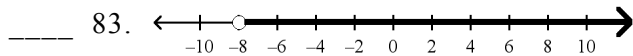
**What is the graph of the inequality?**

\_\_\_\_\_ 82.  $x \geq -3$



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What inequality represents the graph?

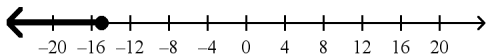


- a.  $x \leq -8$       b.  $x < -8$       c.  $x > -8$       d.  $x < 8$

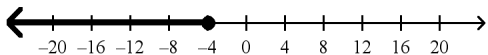
What are the solutions of the inequality? Graph the solutions.

\_\_\_\_\_ 84.  $x - 3 \leq -12$

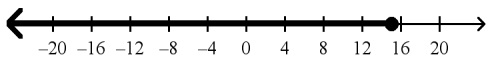
a.  $x \leq -15$



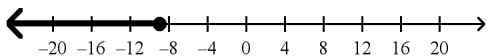
b.  $x \leq \frac{-12}{3}$



c.  $x \leq 15$

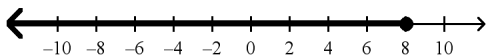


d.  $x \leq -9$

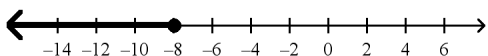


\_\_\_\_\_ 85.  $y - 6 \leq 2$

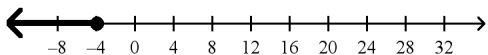
a.  $y \leq 8$



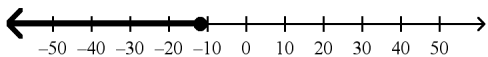
b.  $y \leq -8$



c.  $y \leq -4$



d.  $y \leq -12$

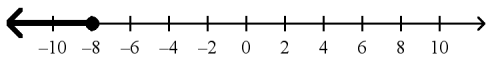


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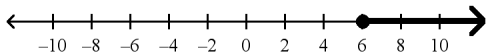
What are the solutions of the inequality? Graph and check the solutions.

\_\_\_\_\_ 86.  $-\frac{x}{4} \leq 2$

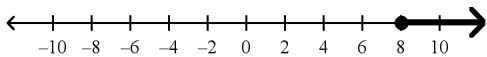
a.  $x \leq -8$



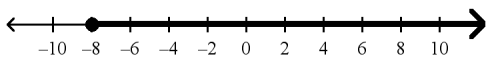
b.  $x \leq 6$



c.  $x \geq 8$



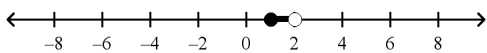
d.  $x \geq -8$



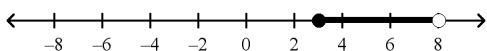
What are the solutions of the compound inequality? Graph the solutions.

\_\_\_\_\_ 87.  $-2 \leq 2x - 4 < 8$

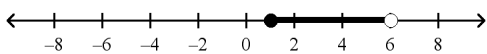
a.  $1 \leq x < 2$



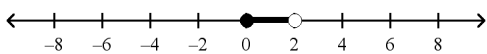
b.  $3 \leq x < 8$



c.  $1 \leq x < 6$



d.  $0 \leq x < 2$

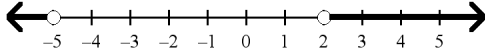


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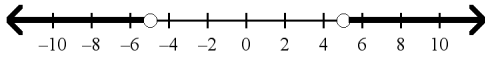
What are the solutions of the compound inequality? Graph the solutions.

\_\_\_\_\_ 88.  $2x - 2 < -12$  or  $2x + 3 > 7$

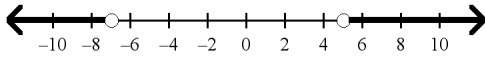
a.  $x < -5$  or  $x > 2$



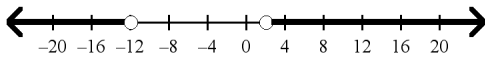
b.  $x < -5$  or  $x > 5$



c.  $x < -7$  or  $x > 5$

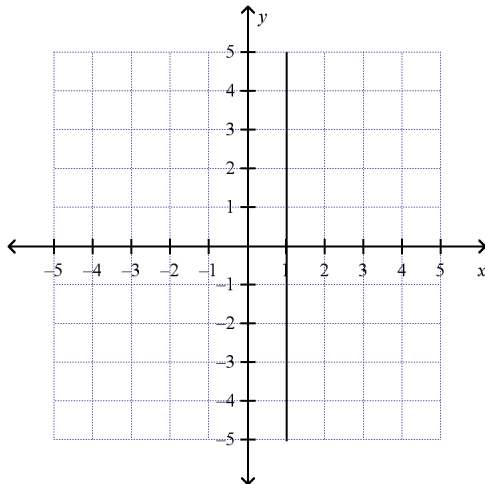


d.  $x < -12$  or  $x > 2$



What is the slope of the line?

\_\_\_\_\_ 89.



a. 0

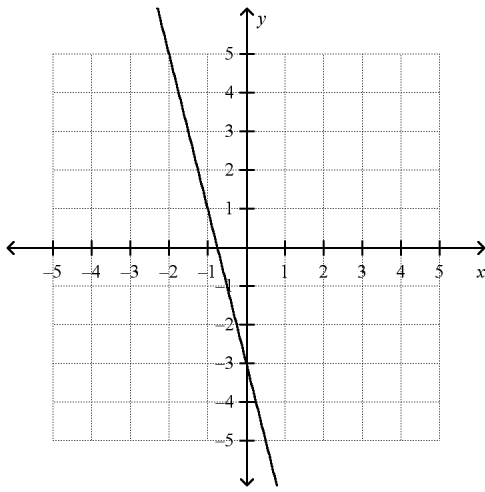
b. undefined

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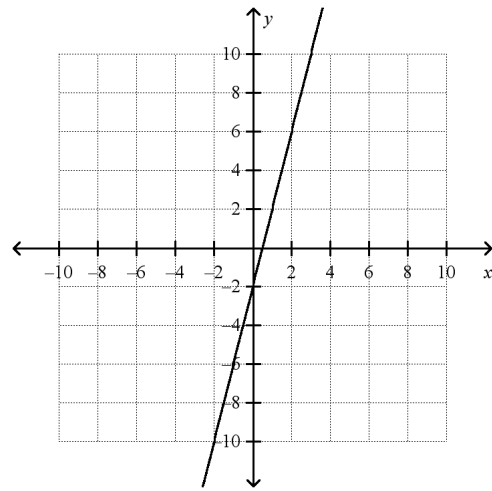
**Graph the equation.**

\_\_\_\_\_ 90.  $y = 4x - 3$

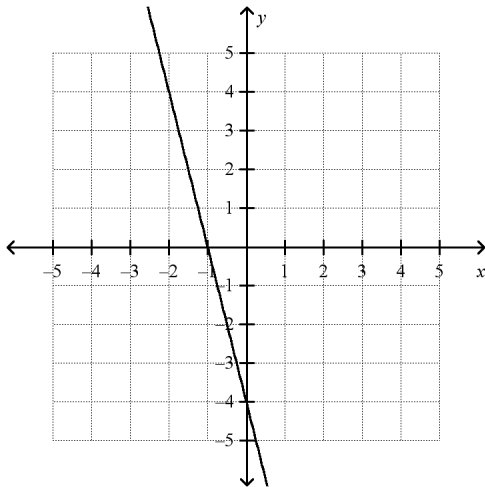
a.



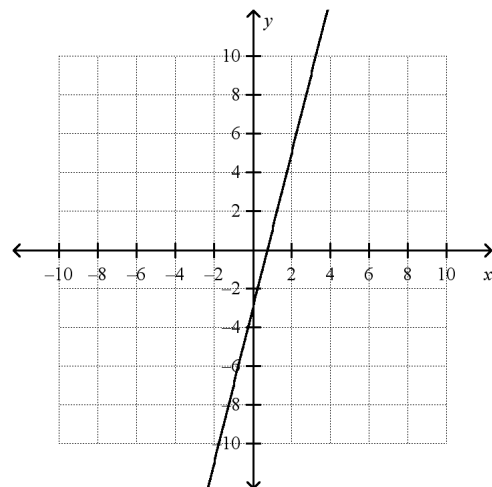
c.



b.



d.

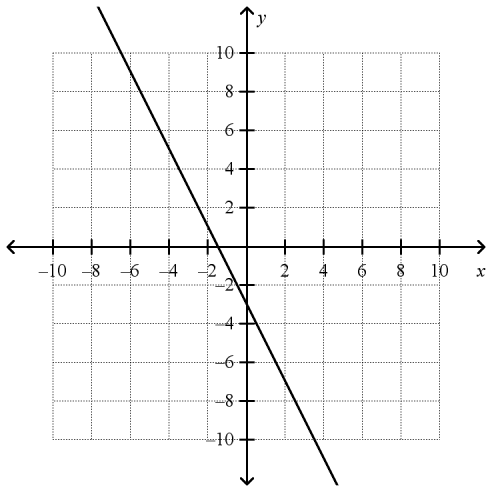




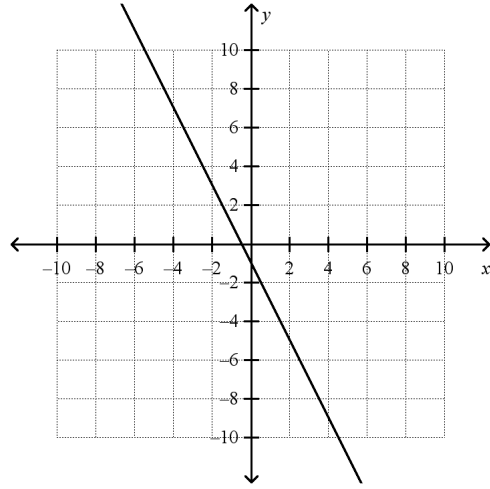
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91.  $y = -2x - 3$

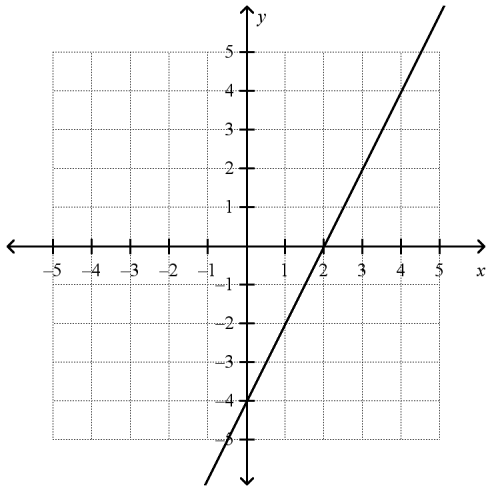
a.



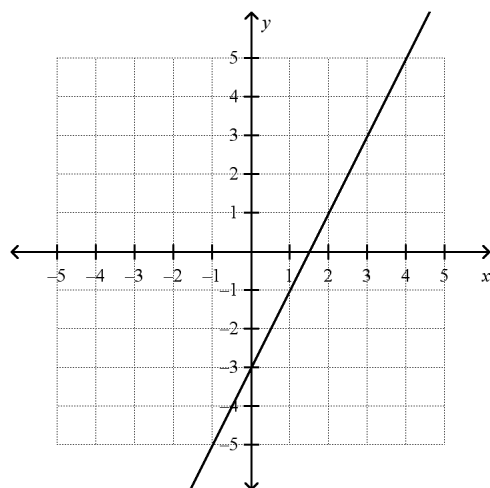
c.



b.



d.

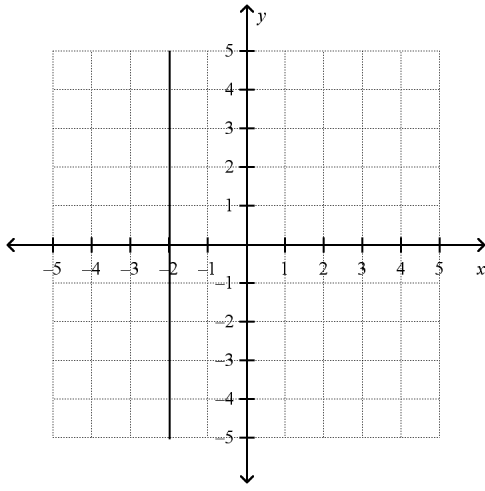


Name: \_\_\_\_\_

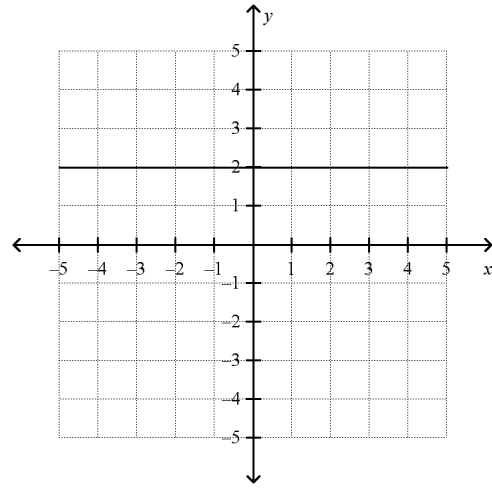
What is the graph of the equation?

\_\_\_\_\_ 92.  $y = -2$

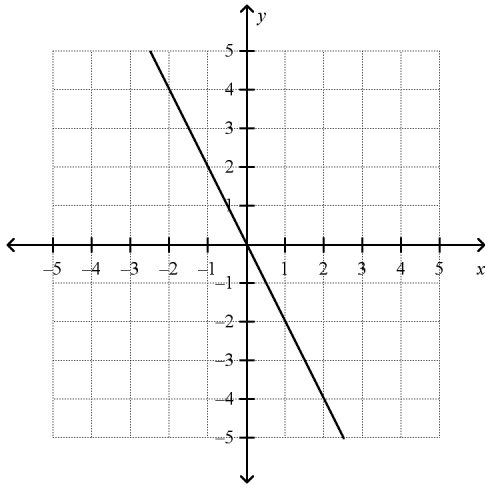
a.



c.



b.



d.

