

Geometry Section

1. Which is the slope of a line perpendicular to the line $3x + 4y = 7$?

[A] $-\frac{3}{4}$

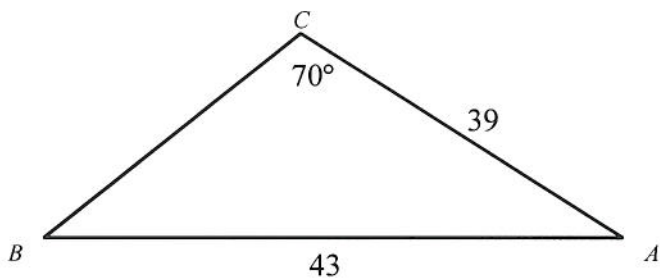
[B] $-\frac{4}{3}$

[C] $\frac{4}{3}$

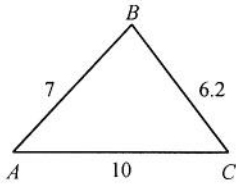
[D] $\frac{3}{4}$

2. What best describes the relationship between the lines with equations $3x + 5y = 7$ and $-5x + 3y = -1$?

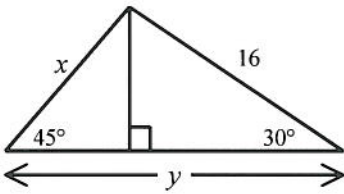
3. Use either the law of sines or the law of cosines to solve for $m\angle A$.



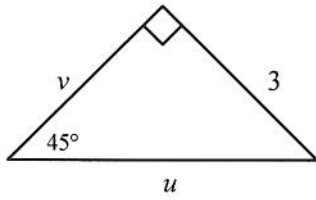
4. Find the unknown measures in the triangle.



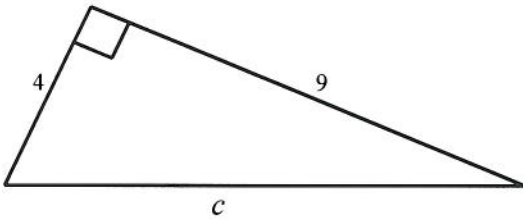
5. Find the value of x and y .



6. Find the lengths of the missing sides in the triangle. Round decimal answers to the nearest tenth.



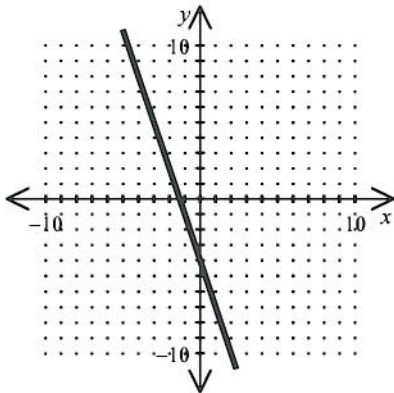
7. Find the length of the hypotenuse of this right triangle. Give an exact answer. Show your work.



8. Tell whether a triangle with side lengths 5 , 3 , and $\sqrt{28}$ is a right triangle. Explain why or why not.

1. Use the table and graph to write a linear equation.

x	-2	-1	0	1	2
y	2	-1	-4	-7	-10



2. Write the slope-intercept form of an equation of the line that passes through the point $(7, 3)$ and has the slope $m = -2$.

- [A] $y = -2x + 3$ [B] $y = -2x + 17$ [C] $y = 2x + 3$ [D] $y = 2x + 17$

3. Write an equation in slope-intercept form for a line that passes through the given pair of points.

$(5, 4), (2, 7)$

[A] $y = -x + 9$ [B] $y = x - 9$ [C] $y = x - \frac{1}{9}$ [D] $y = -x + \frac{1}{9}$

4. Which is the equation of the line passing through the point $(1, -4)$ and perpendicular to the line $y = -\frac{1}{2}x - 2$?

[A] $x - 2y - 9 = 0$ [B] $2x - y - 6 = 0$ [C] $-x + 2y + 9 = 0$ [D] $-2x + y - 6 = 0$

5. Write an equation in slope-intercept form of the line that passes through $(-5, -4)$ and is parallel to the graph of $y = -6x + 2$.

6. Use elimination to solve the system of equations.

$$\begin{cases} 2x + y = 9 \\ 7x + 4y = 29 \end{cases}$$

7. In May, Bradley bought 32 styrofoam balls and decorated them as toy figurines. In June, he sold 20 figurines. In May, Lupe bought 40 styrofoam balls to decorate and in June, she sold 14 figurines. Which matrix represents all of their May purchases and their June sales?

[A]

	May	June
Bradley	32	12
Lupe	40	26

[B]

	May	June
Bradley	32	-20
Lupe	40	-14

[C]

	May	June
Bradley	32	40
Lupe	-12	-26

[D]

	May	June
Bradley	32	40
Lupe	20	14

8. Maurice has 41 game cards and 40 baseball cards in his card collection, and Juanita has 47 game cards and 71 baseball cards in her collection. Create and label a matrix to represent both of their collections.

Factor the quadratic expression.

9. $x^2 - 15x + 54$

[A] $(x+1)(x+54)$ [B] $(x+9)(x+6)$ [C] $(x-9)(x-6)$ [D] $(x-3)(x-18)$

Factor the quadratic expression.

10. $x^2 - 10x + 24$

11. Use factoring and the Zero-Product Property to find the zeros of the quadratic function.

$$f(x) = x^2 - x - 56$$

12. Solve the equation by completing the square. Give exact solutions.

$$x^2 - 2x - 24 = 0$$

13. Use the quadratic formula to solve the equation.

$$3x^2 + 10x - 8 = 0$$

For the quadratic function, write the equation of the axis of symmetry, and find the coordinates of the vertex.

14. $y = 3x^2 + 36x + 112$

[A] $x = 6; (6, -4)$

[B] $x = 6; (6, 4)$

[C] $x = -6; (-6, 4)$

[D] $x = -6; (-6, -4)$

15. $y = x^2 + 4x - 2$

16. Write the equation $\log_3 \frac{1}{27} = -3$ in exponential form.

[A] $3^3 = -27$

[B] $3^{-3} = 27$

[C] $3^{-3} = \frac{1}{27}$

[D] $3^3 = -\frac{1}{27}$

17. Write the equation in logarithmic form.

$$2^{-4} = \frac{1}{16}$$

18. Write the equation $\log_6 \frac{1}{36} = -2$ in exponential form.

19. Evaluate $x^4 - 3x^2 - 18$ when $x = 4$. [A] -26 [B] 190 [C] -20 [D] -14

20. Evaluate $3x^2 + x + 4$ when $x = 2$.