

# Graphing linear equations

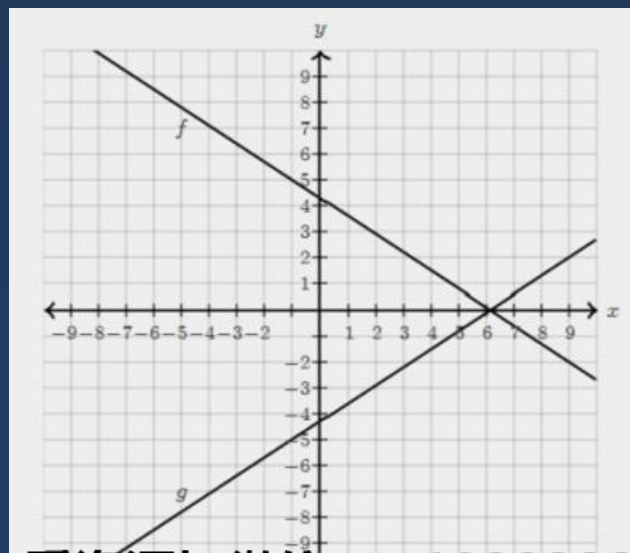


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1. The lines  $f$  and  $g$  are graphed BELOW in the  $xy$ -plane. Line  $g$  can be written as the equation  $y=ax+b$ , where  $a$  and  $b$  are constants. Which of the following equations represents line  $f$ ? Please choose from one of the following options.

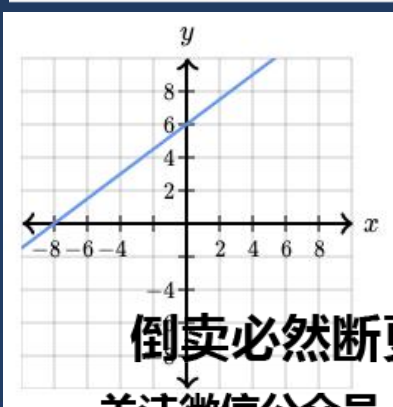
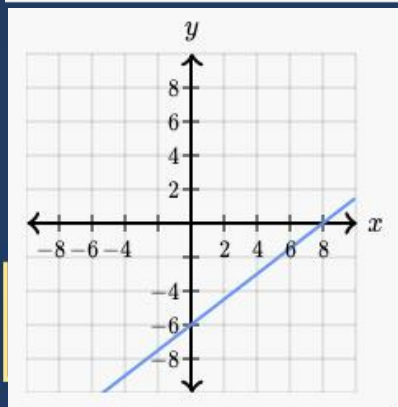
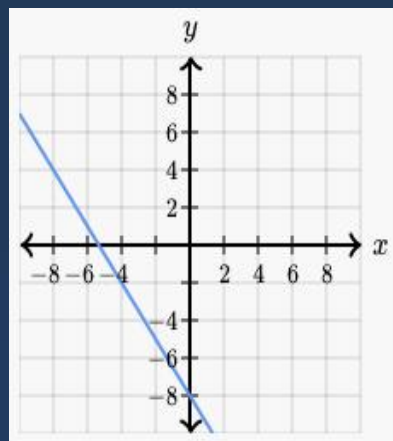
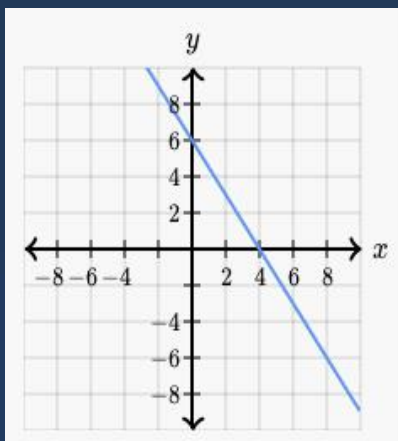
- A.  $y=ax-b$
- B.  $y=-ax+b$
- C.  $-y=ax+b$
- D.  $x=ay+b$



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2. Which of the following graphs represents the equation  $(y+6) = -\frac{3}{2}(x-8)$



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3. The equation  $6y + 12x = 18$  is graphed in the  $xy$ -plane. Which of the following equations has a graph that is perpendicular to the graph of the above equation?

A.  $y = -2x + 3$

B.  $y = \frac{1}{2}x + 3$

C.  $y = 2x + 3$

D.  $y = -\frac{1}{2}x + 3$

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4. Which of the following equations represents a line in the  $xy$ -plane with an  $x$ -intercept at  $(-2, 0)$  and a slope of 4?

- A.  $y = 4x + 8$
- B.  $y = -4x + 8$
- C.  $y = 4x - 2$
- D.  $y = -4x - 2$

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5. The equation  $y = \frac{3}{2}(x - 8)$  is graphed in the  $xy$ -plane. Which of the following equations will have a graph that is parallel to the graph of the above equation and have an  $x$ -intercept on the negative  $x$ -axis?

A.  $y = \frac{3}{2}(x + 8)$

B.  $y = \frac{3}{2}x - 8$

C.  $y = -\frac{2}{3}(x + 8)$

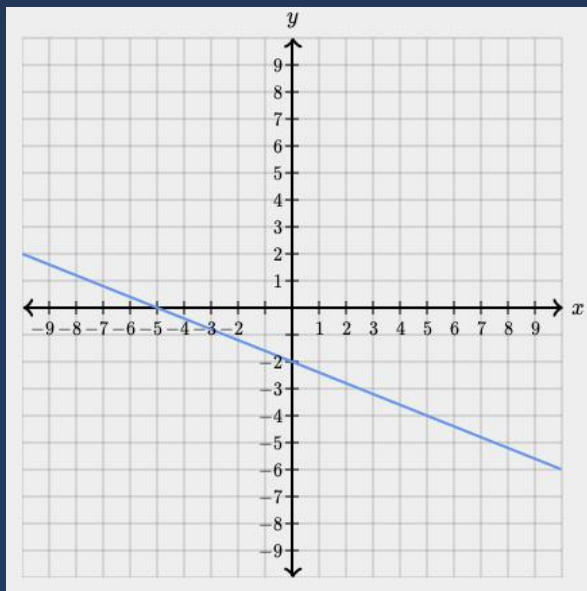
D.  $y = -\frac{2}{3}x - 8$

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6. A line is graphed as shown BELOW. Which of the following equations represents the line?

- A.  $y = 25x + 2$
- B.  $y = 25x - 2$
- C.  $y = -25x + 2$
- D.  $y = -25x - 2$

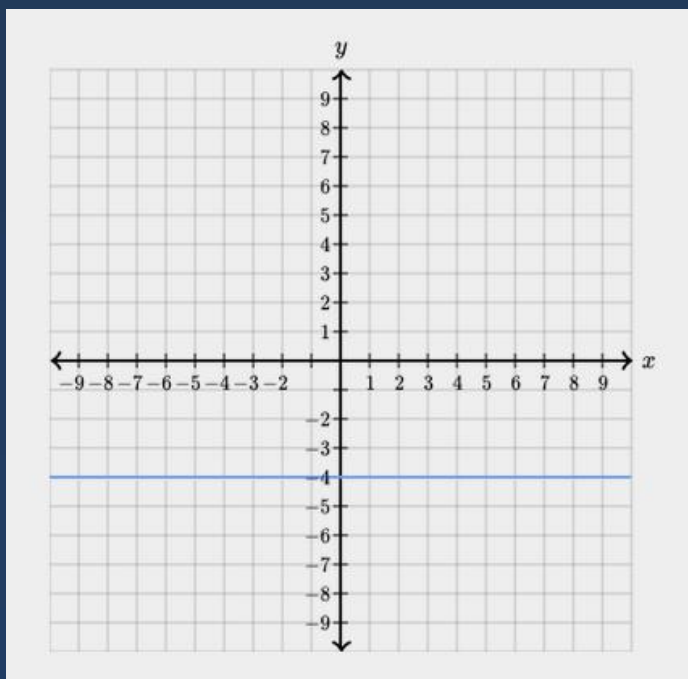


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7. Which of the following equations represents the line graphed BELOW in the  $xy$ -plane?

- A.  $x = -4$
- B.  $y = -4$
- C.  $y = x - 4$
- D.  $x = y - 4$



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8. Two lines graphed in the  $xy$ -plane have the equations  $2x+5y=20$  and  $y=kx-3$ , where  $k$  is a constant. For what value of  $k$  will the two lines be perpendicular?

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

B.  $\frac{2}{5}$

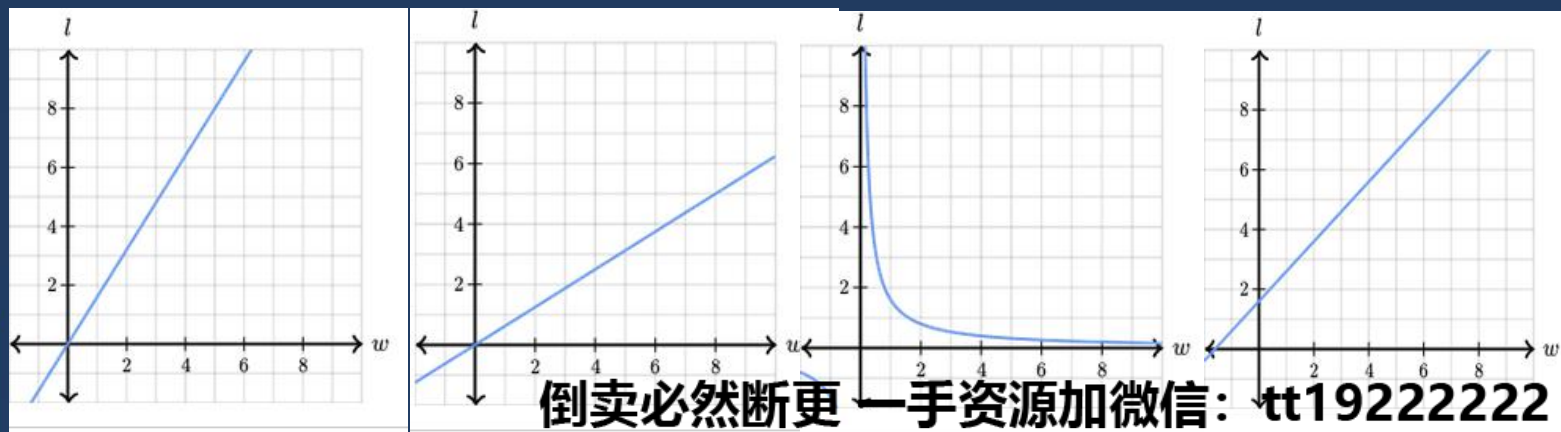
C.  $-\frac{5}{2}$

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

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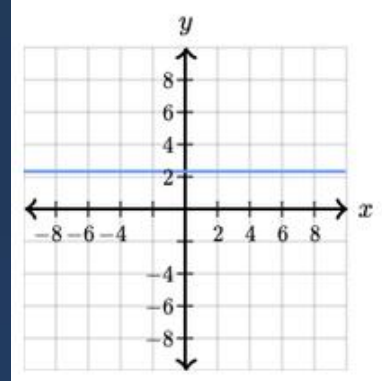
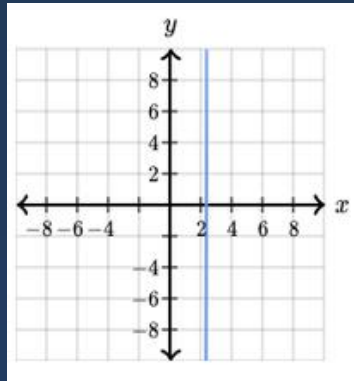
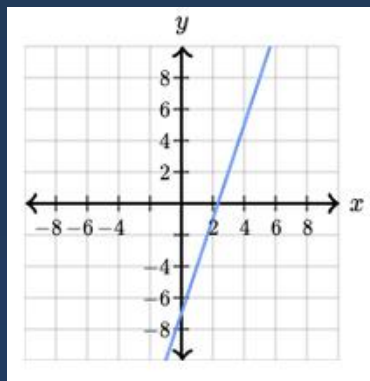
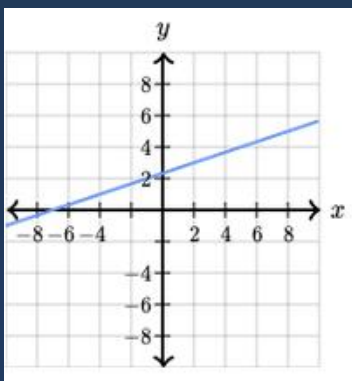
9. A rectangle is said to have a golden ratio if the ratio of its length to width is equal to approximately 1.6. Which of the following graphs represents the relationship between length,  $l$ , and width,  $w$ , in a golden rectangle?



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10. Which of the following represents the graph of the equation  $3y - 7 = 0$ ?



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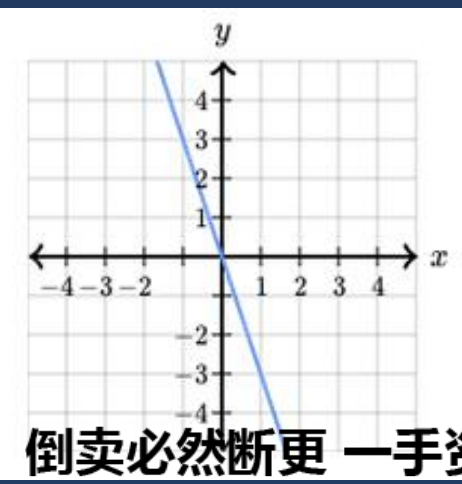
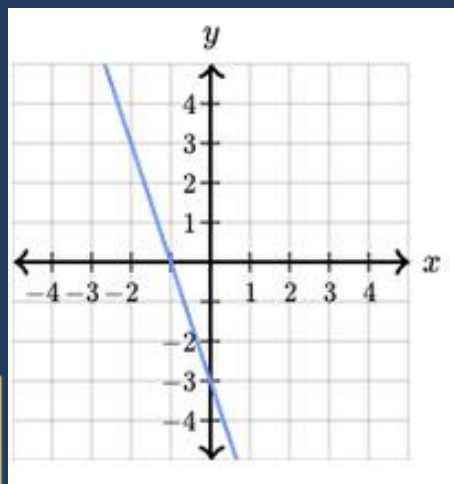
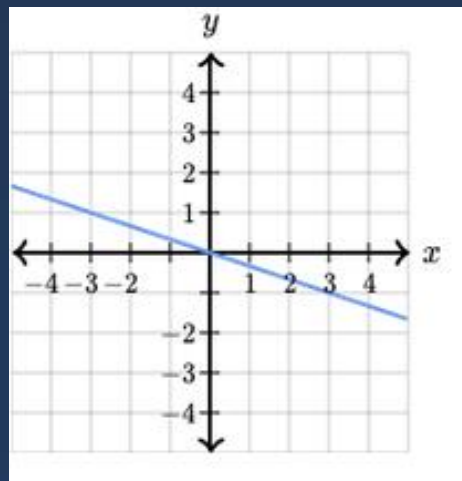
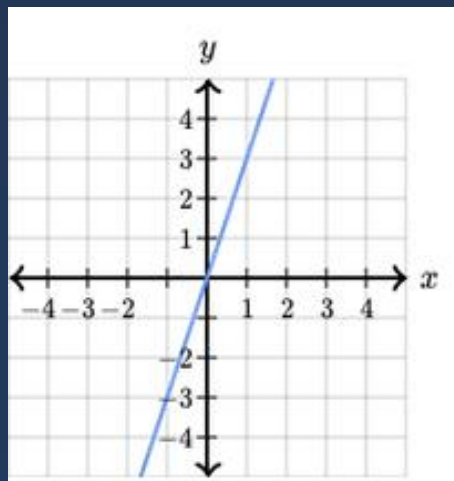
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11. Which of the following represents the graph of the equation  $x = -\frac{1}{3}y$ ?



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12. The line represented by the equation  $y = \frac{1}{12} - x$  is graphed in the  $xy$ -plane. Which of the following statements correctly describes the graph of the line?

- A. The line is perpendicular to the graph  $x + y = 1$ .
- B. The line has a negative slope and a positive  $y$ -intercept.
- C. The line has a positive slope and a negative  $y$ -intercept.
- D. The  $x$ -intercept is equal to the negative of the  $y$ -intercept.

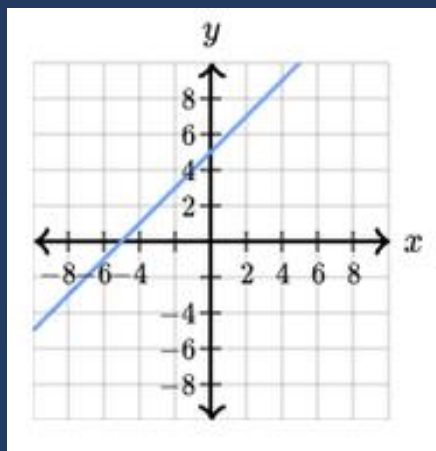
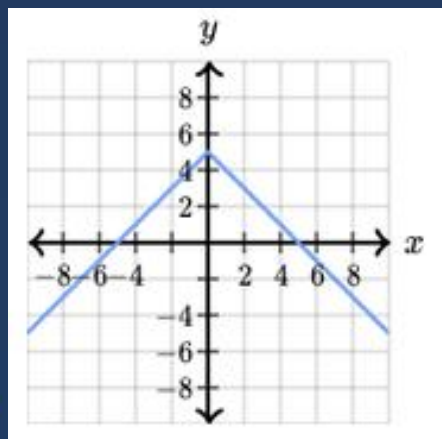
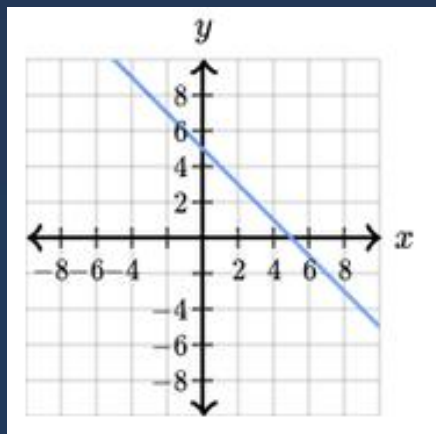
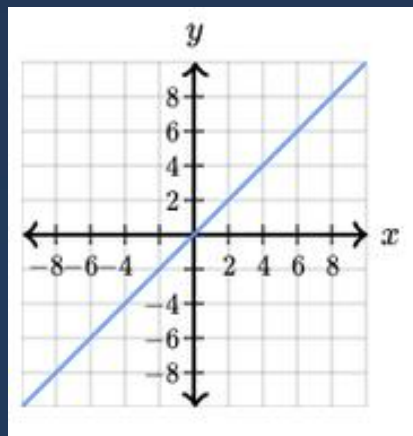
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13. If  $k$  is a rational constant not equal to 1, which of the following graphs represents the equation  $y+5=k(x+y)+5$ ?

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14. What is the equation of the line graphed in the  $xy$ -plane that passes through the point  $(-4, -5)$  and is parallel to the line whose equation is  $3x - 4y = -8$ ?

A.  $y = -\frac{4}{3}x + 10$

B.  $y = \frac{3}{4}x - 2$

C.  $y = \frac{3}{4}x - 8$

D.  $y = -\frac{4}{3}x - 8$

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15. The equations below are graphed in the  $xy$ -plane. Which equation's graph will have a slope of  $\frac{7}{8}$  and a  $y$ -intercept of 3?

- A.  $7x + 8y = 24$
- B.  $7x - 8y = -24$
- C.  $8x + 7y = 3$
- D.  $7x - 8y = 3$

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