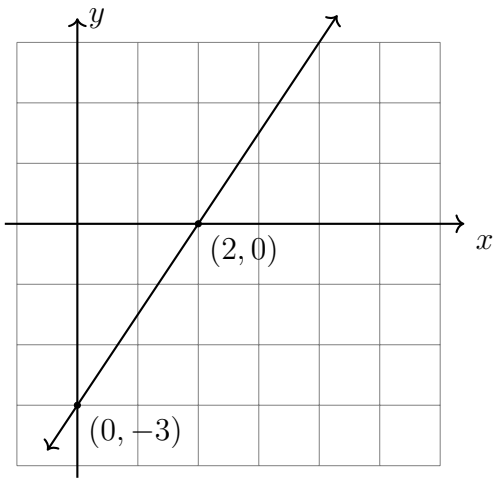
6.13 Test: Analytic geometry **8.F.A.3**

1. A line is plotted in the graph below.



   (a) Write down the y-intercept of the line.

   (b) What is the slope of the line?

   (c) What is the x-intercept of the line?

   (d) Write down its equation in slope-intercept form.

2. Find the slope of the line through the points $(-2, 3)$ and $(4, 5)$.

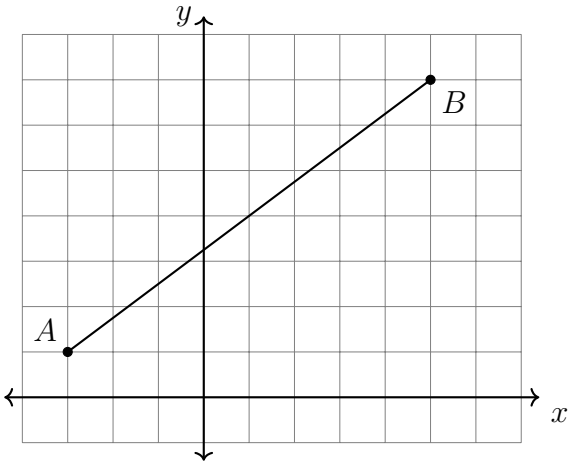
3. A line has a slope of $\frac{3}{5}$ and passes through the point $(10, 2)$.

   (a) Write the equation of the line in the form $(y - y_0) = m(x - x_0)$.

   (b) Rewrite the equation in the form $y = mx + b$.

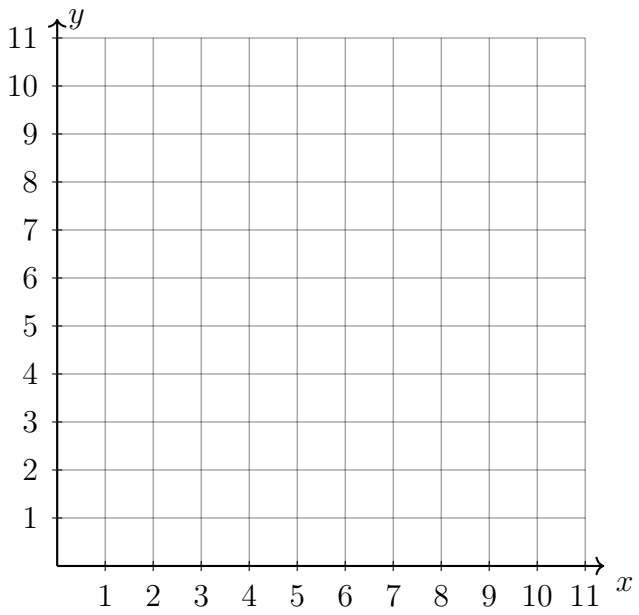
The midpoint formula **HSG.GPE.B.6**

4. In the diagram below, $\overline{AB}$ has endpoints with coordinates $A(-3, 1)$ and $B(5, 7)$. Find the coordinates of the midpoint M of $\overline{AB}$. Mark and label it on the graph.



5. Find the midpoint of $\overline{PQ}$ if $P(5, 11)$ and $Q(1, 4)$.

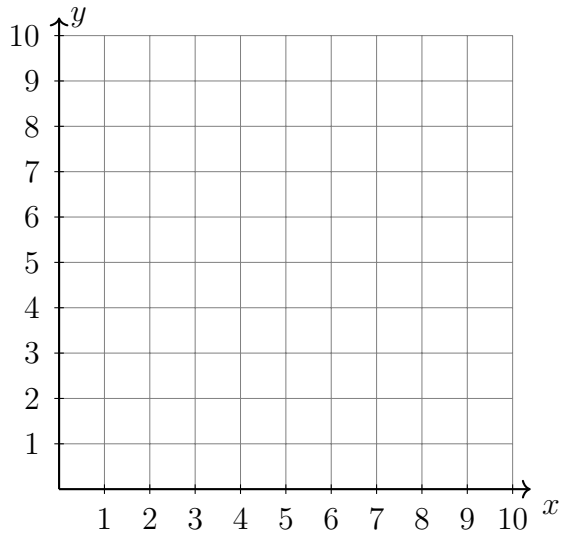
6. Given the midpoint $M(6, 4)$ of $\overline{AB}$ with $A(2, 3)$. Find the coordinates of point B. The use of the grid below is optional.



The distance formula **8.G.B.8**

7. Use the distance formula to find the length of $\overline{RS}$ if $R(1, 17)$ and $S(9, 2)$.

8. Graph and label $\triangle ABC$, $A(2, 2)$, $B(2, 10)$, $C(8, 2)$.



Find the lengths of its sides.

(a) $AB =$

(b) $AC =$

(c) $BC =$

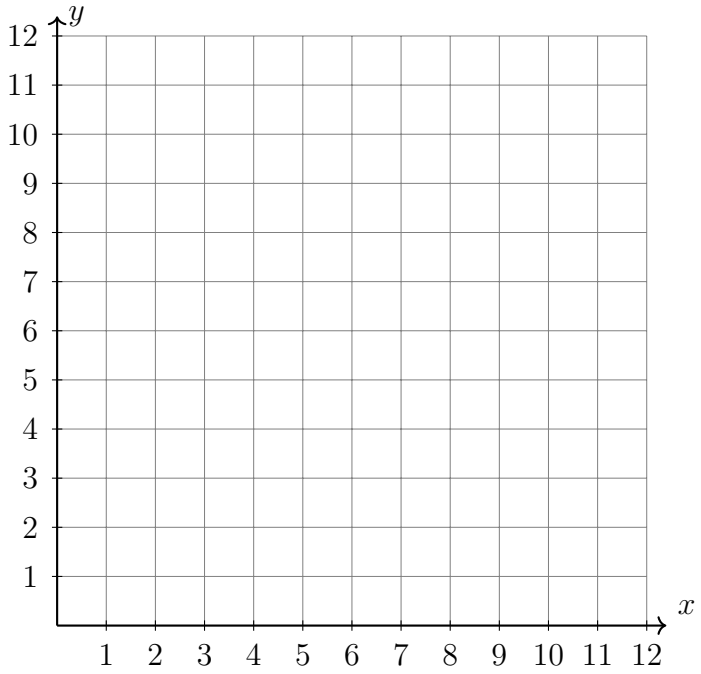
Parallel and perpendicular slopes **HSG.GPE.B.5**

9. The slope of a line is $m = -\frac{3}{5}$. What is the slope of the line parallel to it?

10. What is the slope a line perpendicular to the line $y = 2x + 7$?

Systems of equations **HSG.REI.C.6**

11. Lenny buys fruit for a picnic. Oranges cost \$1 and pineapples cost \$2 each. The total cost is \$10 for seven pieces of fruit. Find the number of each kind of fruit purchased.



12. Graph and label the two equations. Mark their intersection as an ordered pair.

$f(x) = x - 3$ $g(x) = -\frac{3}{5}x + 5$