## 6.12 Pre-Test: Analytic geometry 8.F.A.3

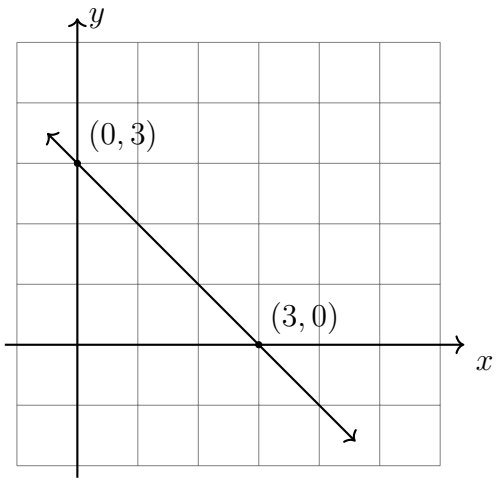
1. A line is plotted in the graph below.

   (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 $(1, 3)$ and $(7, 6)$.

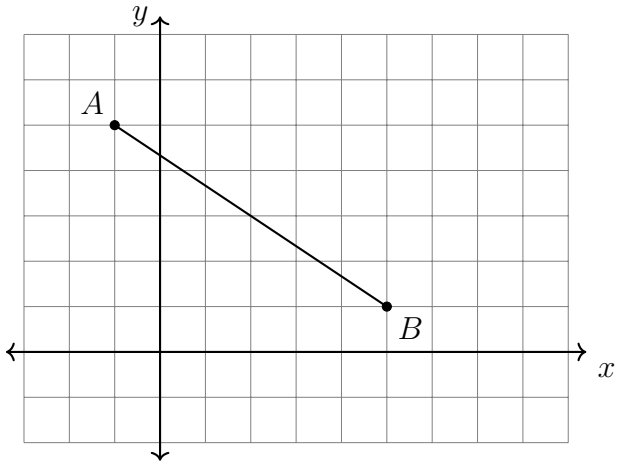
3. A line has a slope of $\frac{2}{3}$ and passes through the point $(9, 7)$.

   (a) Write the equation of the line in the form $(y - y_1) = m(x - x_1)$.

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

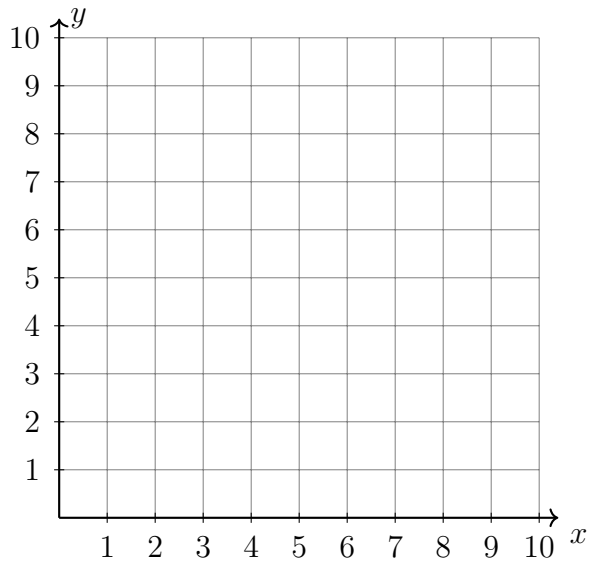
**The midpoint formula** **HSG.GPE.B.6**

4. In the diagram below, $\overline{AB}$ has endpoints with coordinates $A(-1, 5)$ and $B(5, 1)$. 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 $P(3, 7)$ and $Q(13, 2)$.

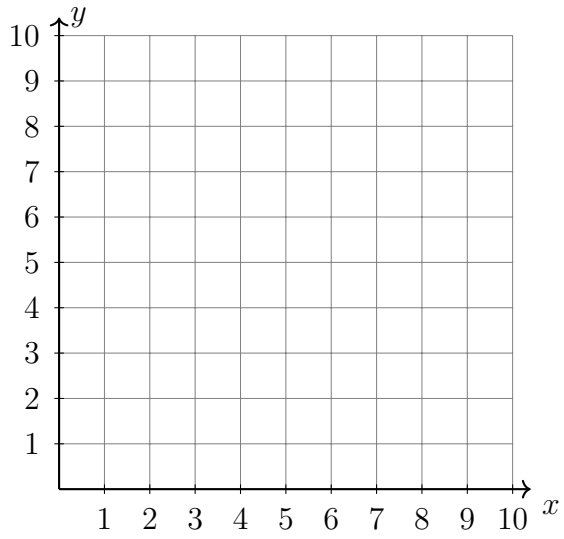
6. Given the midpoint $M(5, 7)$ of $\overline{AB}$ with $A(1, 9)$. Find the coordinates of point $B$. The use of the grid below is optional.



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

7. Use the distance formula to find the length of $\overline{RS}$ if $R(3, 14)$ and $S(8, 2)$.

8. Graph and label $\triangle ABC$, $A(1, 2)$, $B(9, 8)$, $C(9, 2)$.




Find the lengths of its sides.

(a) $AC =$

(b) $BC =$

(c) $AB =$

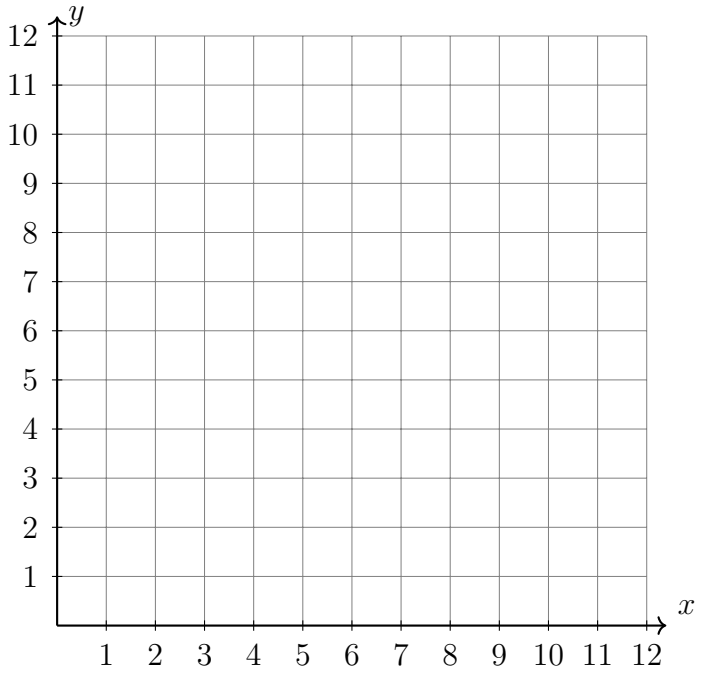
**Parallel and perpendicular slopes** **HSG.GPE.B.5**

9. The slope of a line is $m = \frac{1}{2}$. What is the slope of the line perpendicular to it?

10. What is the slope a line parallel to the line $y = -3x + 1$?

**Systems of equations** **8.G.B.8**

11. Riley buys ten sandwiches for a party. Small sandwiches cost \$4 and large ones \$8. The total cost was \$48. How many of each size did they buy?




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

$f(x) = -x + 5$ $g(x) = \frac{3}{4}x - 2$