

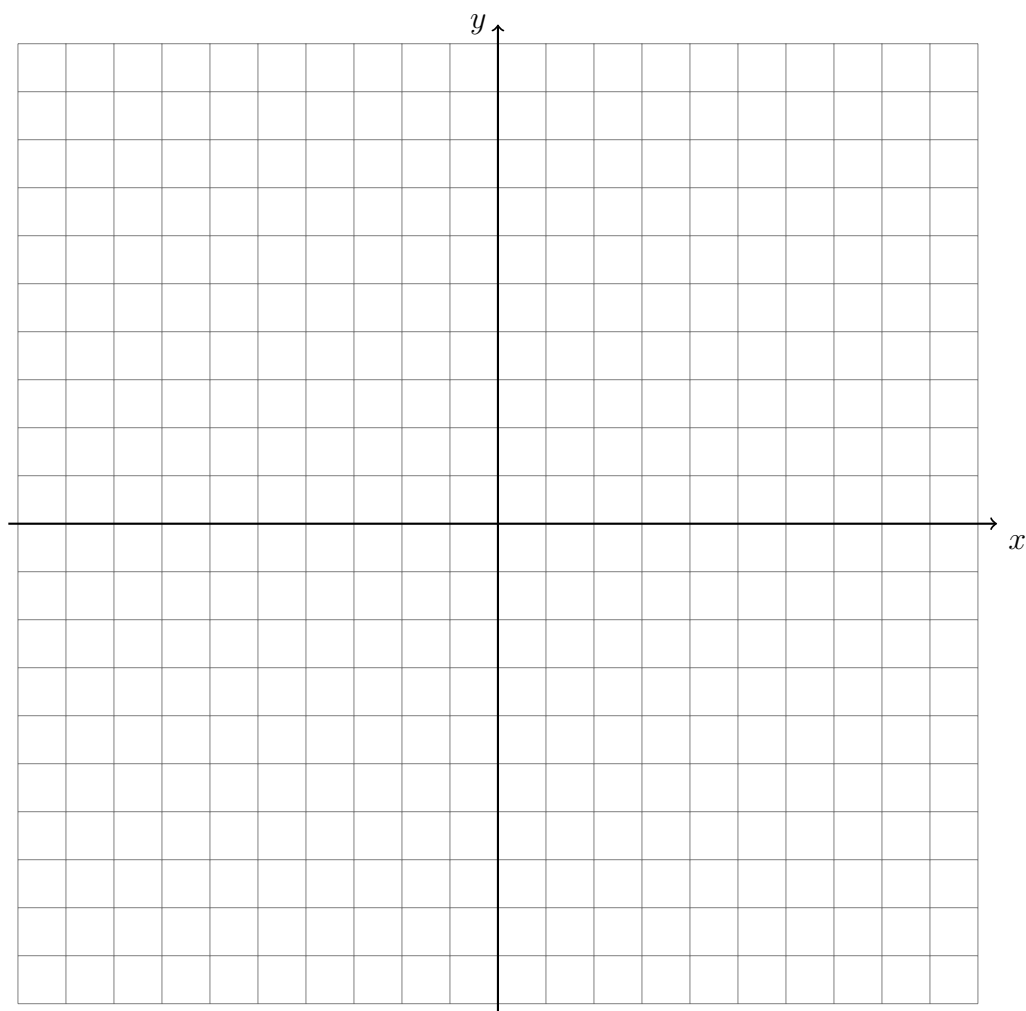
9.9 PreTest: Linear & quadratic functions on the coordinate plane

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

$$y = \frac{2}{3}x - 5$$

$$3x + 2y = 16$$

Are the lines parallel, perpendicular, or neither? Justify your answer.



2. Find each value as a decimal rounded to three significant figures.

(a) 1.73284

(c) $11 - \sqrt{20}$

(b) 14.1578

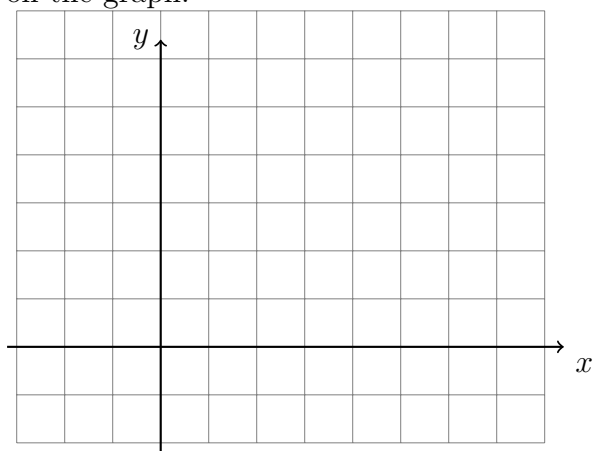
(d) 2π

3. The line l has the equation $y = -\frac{2}{5}x + 3$.

(a) What is the slope of the line k , given $k \parallel l$?

(b) What is the slope of the line m , given $m \perp l$?

4. On the graph below, draw \overline{AB} , with $A(-1, 2)$ and $B(7, 6)$, labeling the end points. Determine and state the coordinates of the midpoint M of \overline{AB} and mark and label it on the graph.

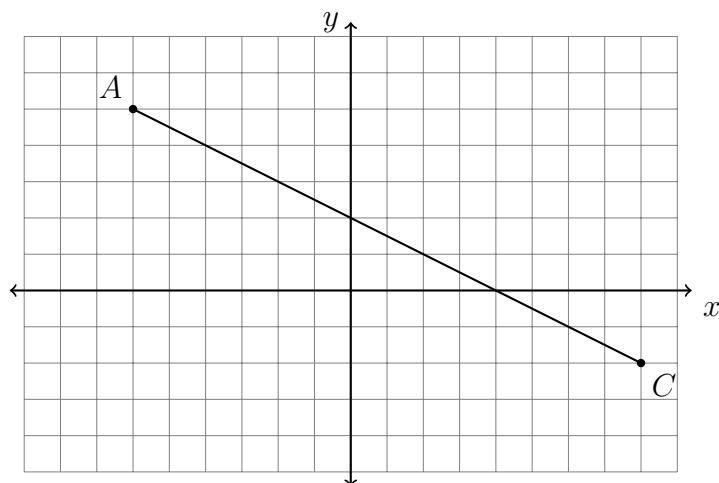


5. Given $K(1, 6)$ and $L(-3, 4)$, find the length of \overline{KL} , expressed as a simplified radical.

Use: $l = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

6. A translation maps $A(3, 11) \rightarrow A'(-2, 3)$. What is the image of $B(0, 7)$ under the same translation?

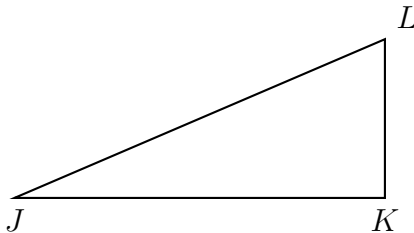
7. In the diagram below, \overline{AC} has endpoints with coordinates $A(-6, 5)$ and $C(8, -2)$.



If B is a point on \overline{AC} and $AB:BC = 2:5$, what are the coordinates of B ?

8. $A(1, -3)$ is one endpoint of \overline{AB} . The segment's midpoint is $M(5, 4)$. Find the other endpoint, B .

9. Given right $\triangle JKL$ with $\overline{JK} \perp \overline{KL}$, $JL = 12.4$, $m\angle J = 41^\circ$. Find the length JK , rounded to the nearest hundredth.



In the following two problems, solve for the value of x .

10. $\frac{1}{5}(10x + 5) = 3$

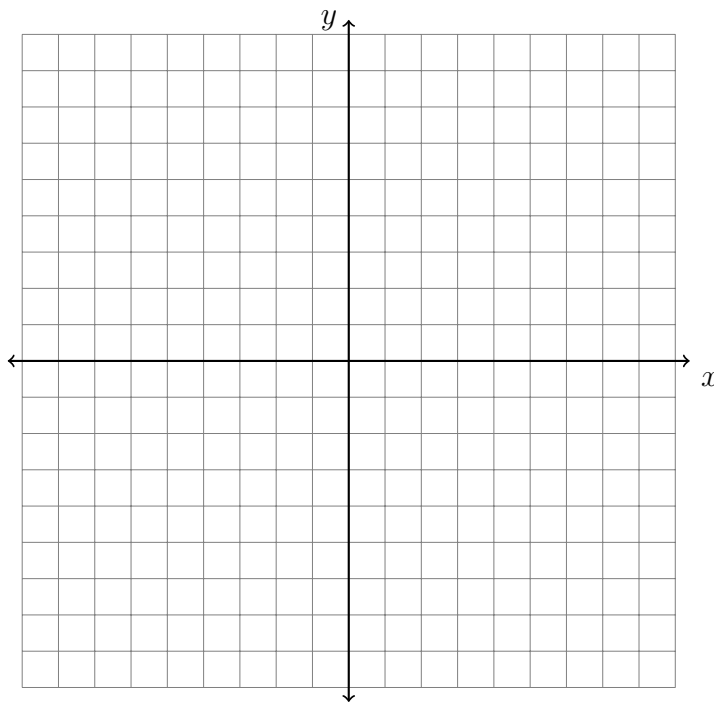
11. $\frac{2}{3}(5 - x) = -4$

12. Given $f(x) = \frac{1}{3}x + 3$. Solve for x such that for $f(x) = 2$.

13. Given $g(x) = -2x^2 - 5x + 3$. Simplify $g(1)$.

14. Given $h(x) = x^2 - 4x - 5$. Solve $h(x) = 0$.

15. Spicy: On the set of axes below, graph the quadrilateral $ABCD$ having coordinates $A(-3, -3)$, $B(5, 1)$, $C(6, 8)$, and $D(-2, 4)$.



Given that $\overline{AD} \parallel \overline{BC}$. Use what you know about slope and the definition that a parallelogram is a quadrilateral with two pairs of parallel sides to prove $ABCD$ is a parallelogram. Be sure to state the conclusion in your proof.