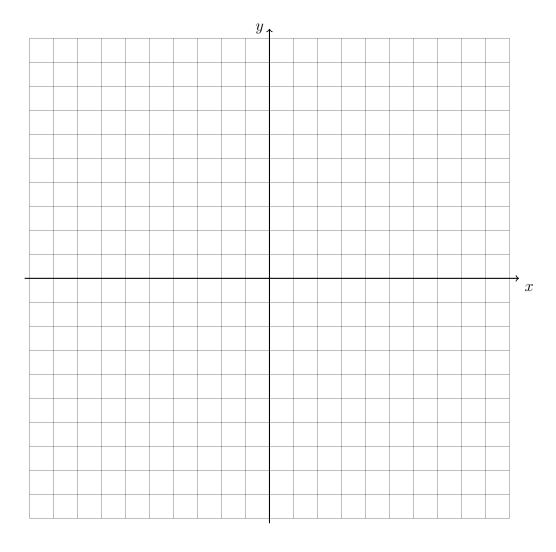
9.9 PreTest: Linear & quadratic functions on the coordinate plane

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.

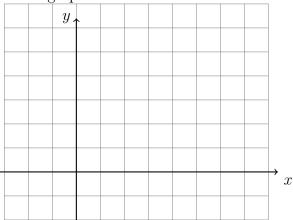


2. Find each value as a decimal rounded to three significant figures.

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

(d)
$$2\pi$$

- 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.



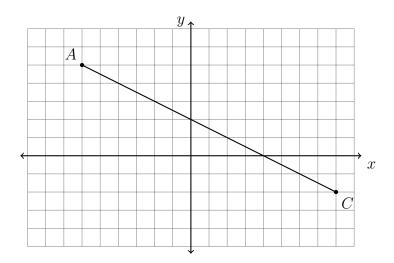
5. Given K(1,6) and L(-3,4), find the length of \overline{KL} , expressed as a simplified radical.

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

6. A translation maps $A(3,11) \to A'(-2,3)$. 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).

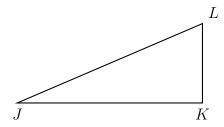
Name:



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.

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

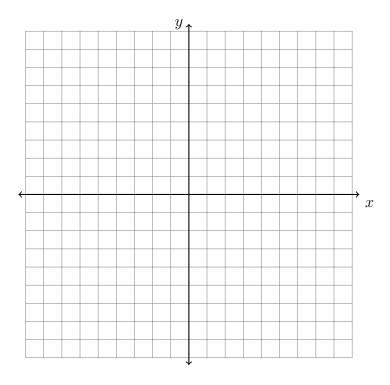
11.
$$\frac{2}{3}(5-x) = -4$$

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.

 $31~{\rm March}~2022$

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.