

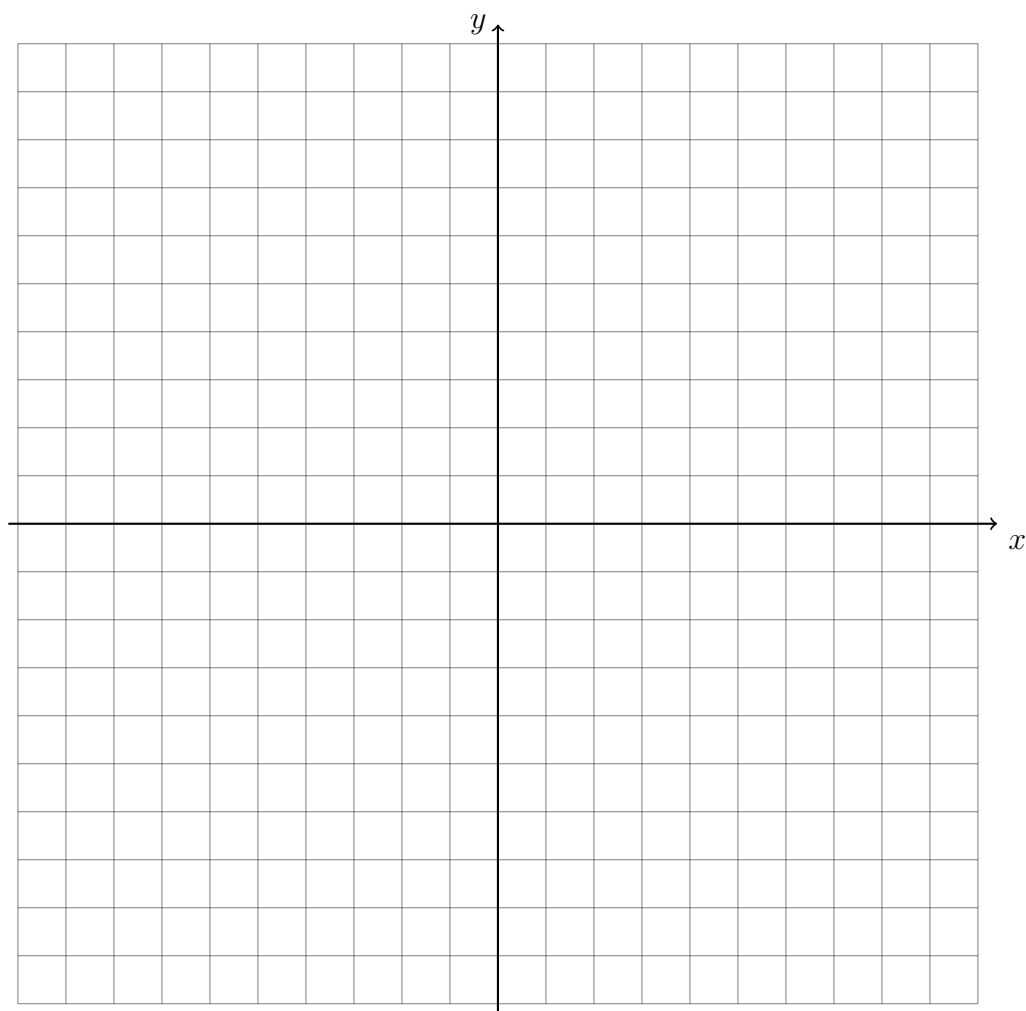
9.9 PreTest: Linear & quadratic functions on the coordinate plane

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

$$y = -x + 8$$

$$3x - 4y = -4$$

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

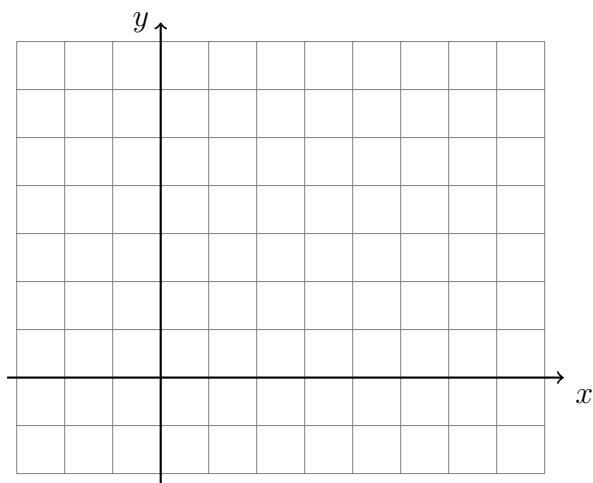
(d) 2π

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 $A(1, 12) \rightarrow A'(-3, 2)$. What is the image of $B(10, -2)$ under the same translation?

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

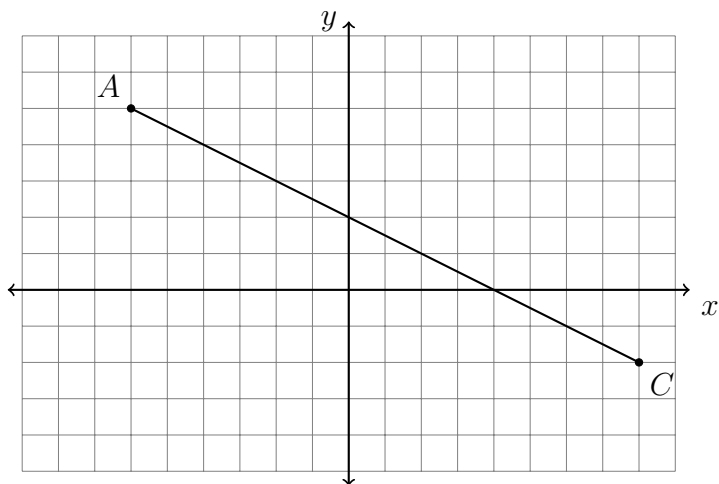
7. $\frac{1}{5}(10x + 5) = 3$

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

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

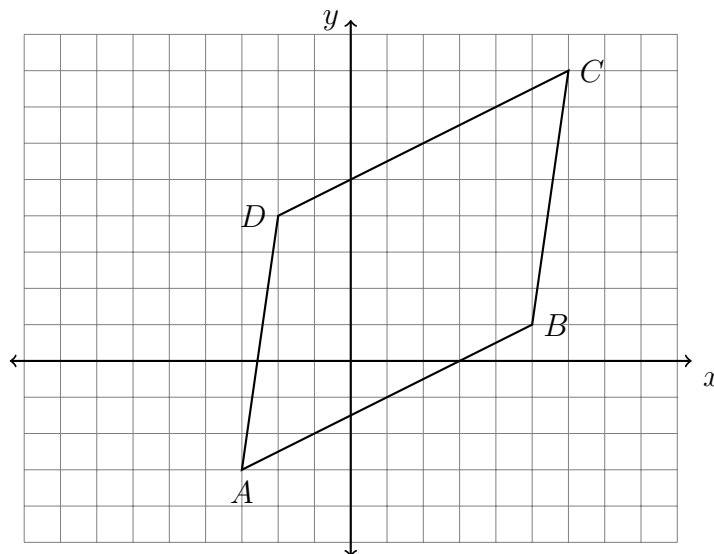
10. Given $g(x) = -2x^2 - 5x + 3$. Simplify $g(1)$.

11. 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 ?
12. $A(1, -3)$ is one endpoint of \overline{AB} . The segment's midpoint is $M(5, 4)$. Find the other endpoint, B .

13. Spicy: Shown below is the quadrilateral $ABCD$ having coordinates $A(-3, -3)$, $B(5, 1)$, $C(6, 8)$, and $D(-2, 4)$.



Given that $\overline{AD} \parallel \overline{BC}$.

(a) Find the slopes of \overline{AB} and \overline{CD}

(b) Hence, show that $\overline{AB} \parallel \overline{CD}$

(c) Use the definition that a parallelogram is a quadrilateral with two pairs of parallel sides to prove $ABCD$ is a parallelogram.