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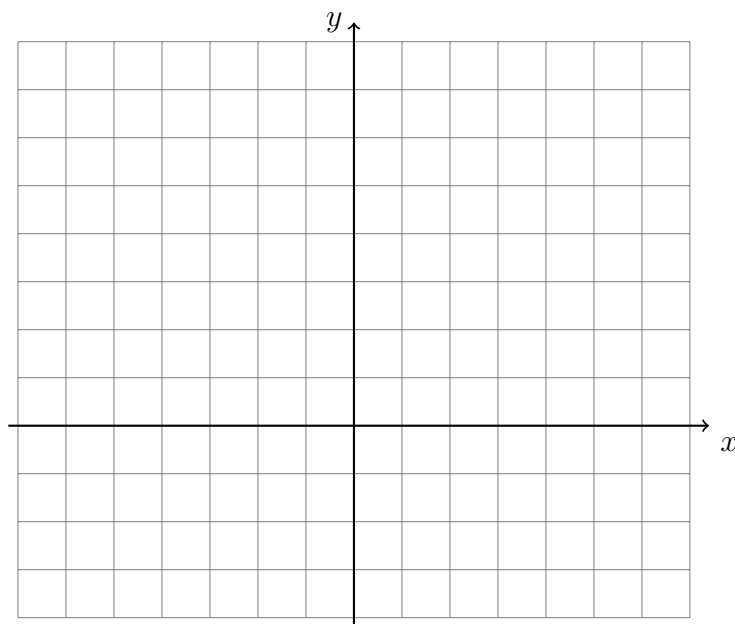
11-2 Homework: Using slope to prove theorems

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

$$y = -2x + 3$$

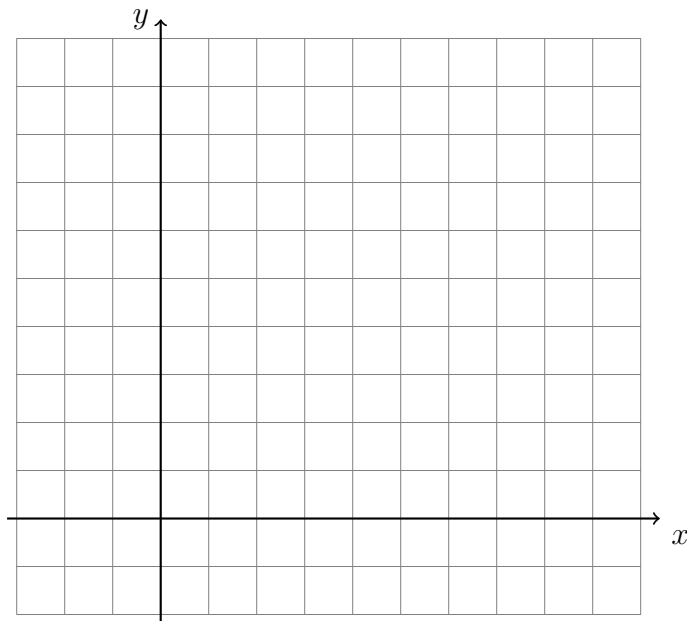
$$2x - 4y = 8$$

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



2. A translation of $x \rightarrow x + 2, y \rightarrow y - 4$ maps $\overline{AB} \rightarrow \overline{CD}$, with $A(-2, 0)$ and $B(0, 5)$. Find the slopes and y -intercepts of \overleftrightarrow{AB} and \overleftrightarrow{CD} , and hence write down the equations of the two lines.

3. On the graph, draw $\triangle ABC$ with vertices A(-2, 1), B(9,-1), C(1, 5). Prove that $\triangle ABC$ is a right triangle by showing $\overline{AC} \perp \overline{BC}$. Complete the concluding statements given.



Segment \overline{AC} and segment _____ are perpendicular so $\angle C$ is a _____ angle.

Angle _____ is a right angle so $\triangle ABC$ is a right triangle.

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7-4 Homework: Quadratic functions

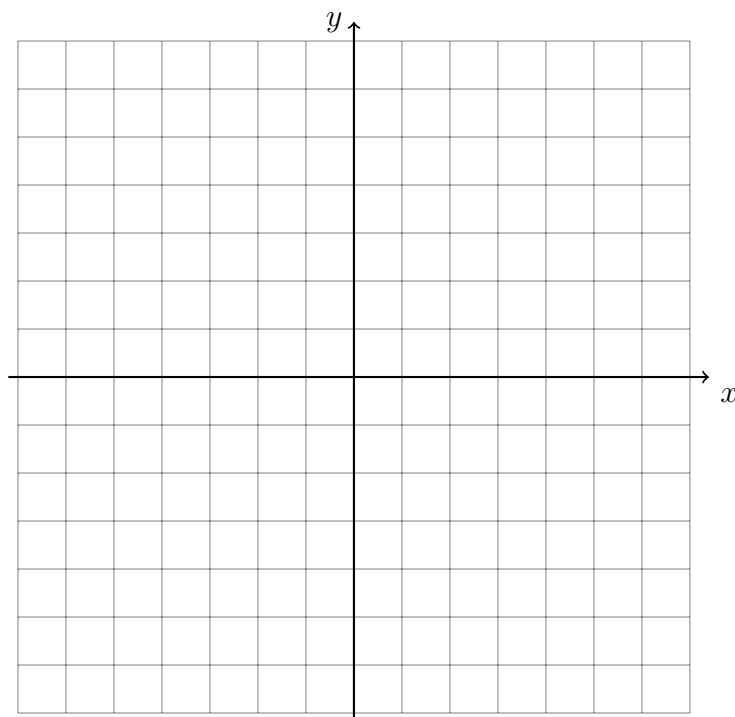
Show your work. For graphs, use a pencil and straight edge.

1. Graph and label each function. Mark the vertices as ordered pairs and the x - and y -intercepts with their values.

$$f(x) = x^2$$

$$g(x) = (x + 4)^2 - 1$$

What transformation maps f onto g ?



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

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

3. $\frac{1}{3}(6 - 3x) = -7$

4. Given $f(x) = x^2 - 7x + 3$. Simplify $f(0)$.

5. Given $g(x) = \frac{2}{5}x - 1$. Solve for x such that for $g(x) = 3$.

6. Solve $x^2 - 6x - 7 = 0$.

7. On the graph, draw $\triangle ABC$ with vertices A(0, 2), B(6,-1), C(-2, -2). Prove that $\triangle ABC$ is a right triangle by showing $\overline{AC} \perp \overline{AB}$.

Be sure to include a concluding statement.

