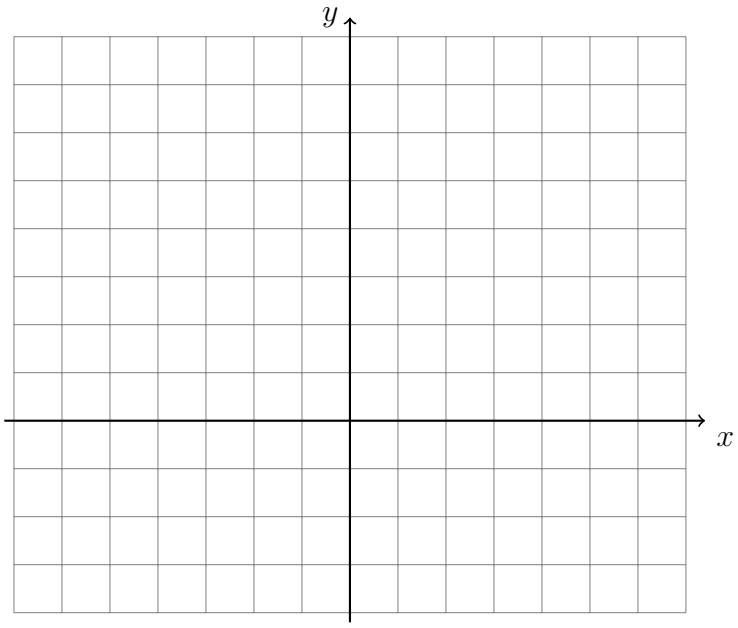
7-3 Do Now: Graphing linear equations

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

   $y = -2x - 1$ $2x + 3y = 9$

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



2. A translation of $x \to x-4, y \to y-3$ maps $\overline{AB} \to \overline{CD}$, with $A(0,2)$ and $B(4,0)$. Find the slopes and y-intercepts of $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$, and hence write down the equations of the two lines.

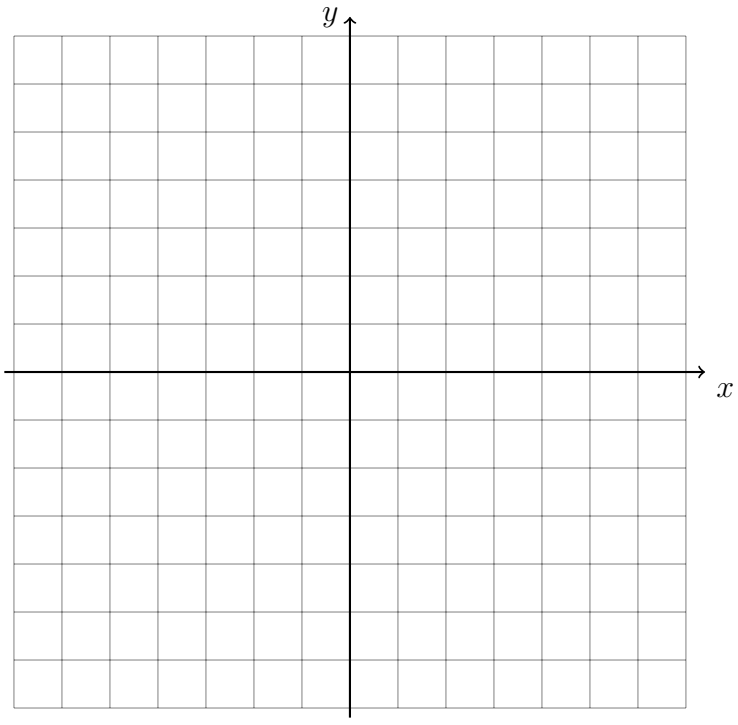
7-3 Homework: Quadratic functions

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.

   $f(x) = x^2$ $\qquad\qquad$ $g(x) = (x-3)^2 - 4$

   What transformation maps f onto g?



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

2. $\frac{3}{7}(14 + 21x) = -3$

3. $\frac{1}{4}(5 - 3x) = -1$

4. Given $f(x) = x^2 - 2x + 1$. Simplify $f(0)$.

5. Given $g(x) = \frac{2}{3}x + 2$. Solve for x such that for $g(x) = 6$.

6. Solve $x^2 - 6x + 5 = 0$.

7. The line $\overleftrightarrow{PQ}$ has the equation $2x + 5y = 10$ with the two points' coordinates $P(0, a)$ and $Q(b, 0)$. Find the values of a and b.

Factor each quadratic

8. $f(x) = x^2 - 6x + 9$

9. $g(x) = x^2 + 7x + 12$