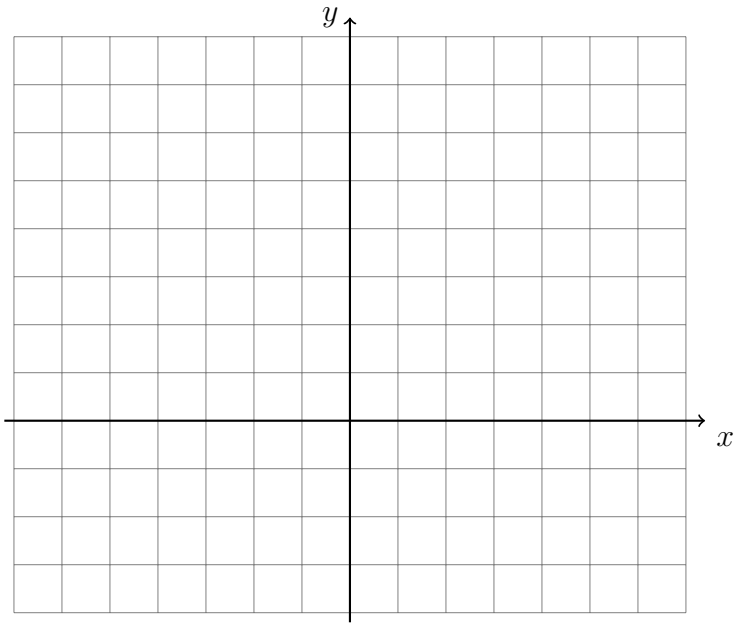
Do Now: Graphing linear equations

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

   $y = \frac{1}{2}x - 3$ $y = -2x + 7$

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



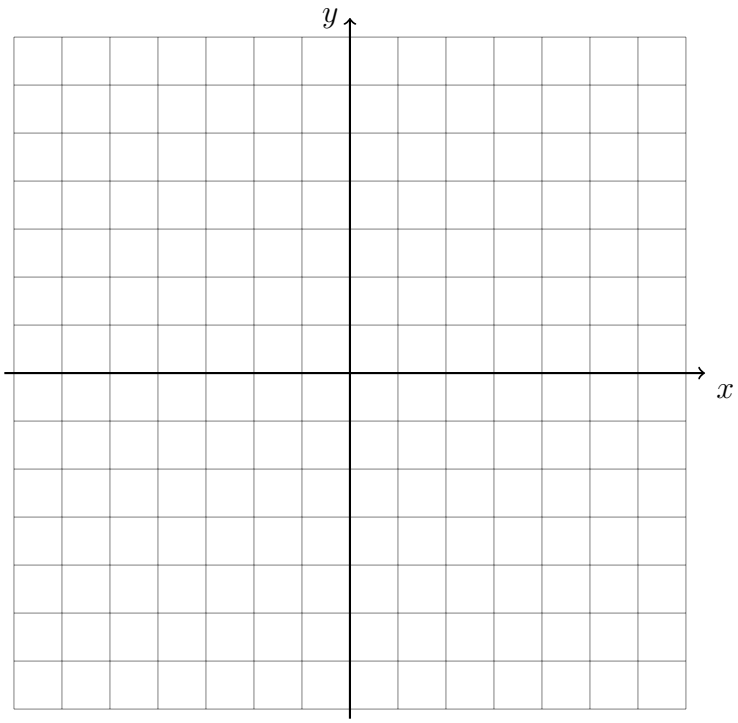
2. A dilation of $k = 2$ centered at the origin maps $\overline{AB} \to \overline{CD}$, with $A(0, 2)$ and $B(4, 0)$. Find the slopes and y-intercepts of $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$, and hence write down the equations of the two lines.

Homework: Linear functions

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

1. Solve for y, then graph and label, marking the intersection as an ordered pair.

   $3x - 2y = 12$ $\frac{3}{2}x + 3y = 6$



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

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

3. $\frac{1}{3}(6 - 3x) = 11$

4. Given $f(x) = -x + 1$. Simplify $f(5)$.

5. Find $g(x) = \frac{1}{2}x - 3$ for $x = 6$.

6. Given $h(x) = \dfrac{2x - 3}{7}$. Evaluate the expression $h(-2)$.

7. The line $\overleftrightarrow{PQ}$ has the equation $y = 3x + 9$ with the two points' coordinates $P(0, a)$ and $Q(b, 0)$. Find the values of a and b.

Simplify each expression ("Collect like terms")

8. $x^2 - 3x - 4 + 2x^2 + 2x + 4$

9. $5(a^2 - 3a + 1) - 2(a^2 + 2a - 3)$