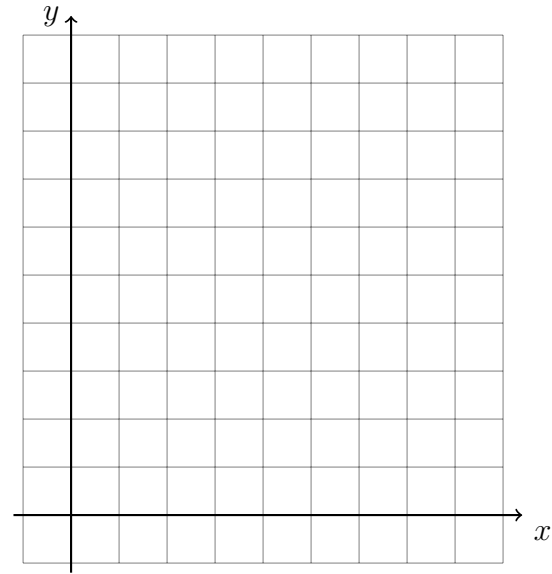


9.6 Distance formula, perpendicular and parallel slopes

1. Do Now: Graph and label the line segment \overline{AB} , $A(1, 3)$ and $B(5, 9)$.

- (a) Mark the midpoint M of \overline{AB} . Label it as an ordered pair.

- (b) Find the slope of \overline{AB}



2. Write down the slope perpendicular to the given slope.

(a) $m = \frac{1}{2}$ $m_{\perp} =$

(c) $m = -2$ $m_{\perp} =$

(b) $m = -\frac{3}{5}$ $m_{\perp} =$

(d) $m = 0.75$ $m_{\perp} =$

3. The line l has the equation $y = -\frac{1}{2}x + 3$.

- (a) What is the slope of the line k , given $k \parallel l$?

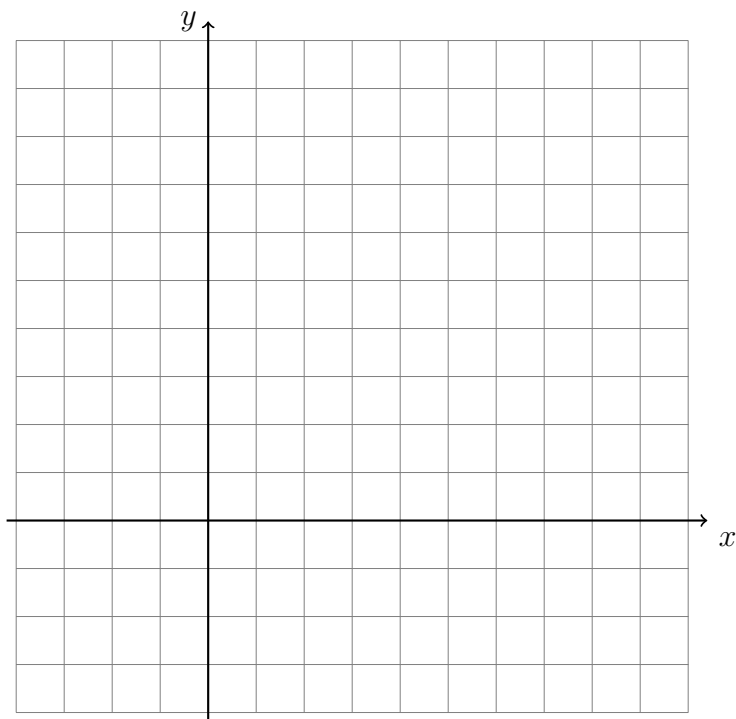
- (b) What is the slope of the line j , given $j \perp l$?

4. Find the slope m of the line $x - 2y = 1$. Write down m_{\perp} .

5. Plot and label the line segment \overline{PQ} , $P(-1, 8)$ and $Q(7, 2)$.

(a) Graph the perpendicular bisector of \overline{PQ} and label it with its equation in the form $y = mx + b$.

(b) Plot and label $R(6, 9)$. Compare the distances PR and PQ .



6. Solve each system of equations. Check your answer.

(a)
$$\begin{aligned} 4x + 8y &= 20 \\ -4x + 2y &= -30 \end{aligned}$$

(b)
$$\begin{aligned} 8x + y &= -16 \\ -3x + y &= -5 \end{aligned}$$