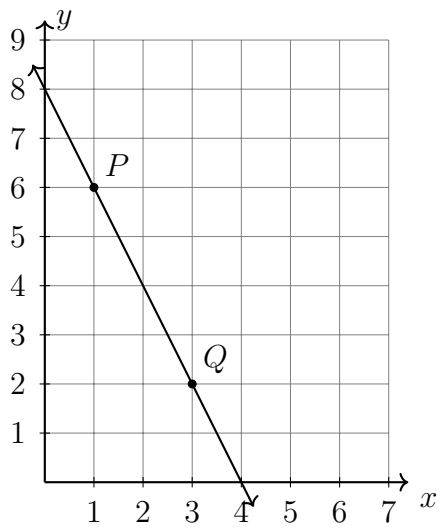
Unit 6: Analytic geometry Name:
13 December 2022

6.4 Classwork: Parallel and perpendicular slopes

The slope of a line: $m = \dfrac{y_2 - y_1}{x_2 - x_1}$

1. Given $\overleftrightarrow{PQ}$, $P(1, 6)$, $Q(3, 2)$. Find its slope, y-intercept, and equation.



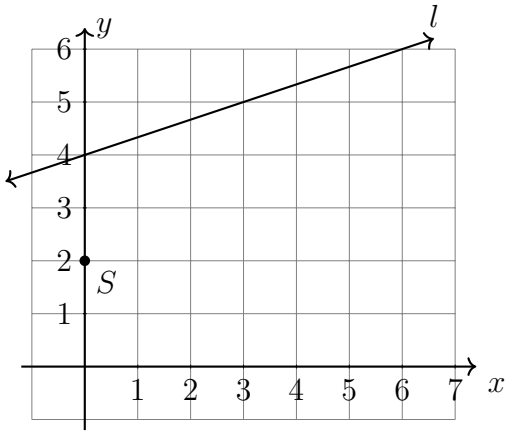
2. The line l is shown on the grid below.

   (a) Write down it's slope, y-intercept.
   $m =$ $b =$

   (b) Write down the equation of line l.

   (c) Draw a line parallel to line l though point S.

   (d) Write down the equation of the second line.



3. The line has the equation $y = -x + 7$.

   (a) Write down it's slope and y-intercept. $m =$ $b =$

   (b) Is the point $(4, 4)$ on the line? Justify your answer.

4. The line j has the equation $y = 3x + 2$.

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

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

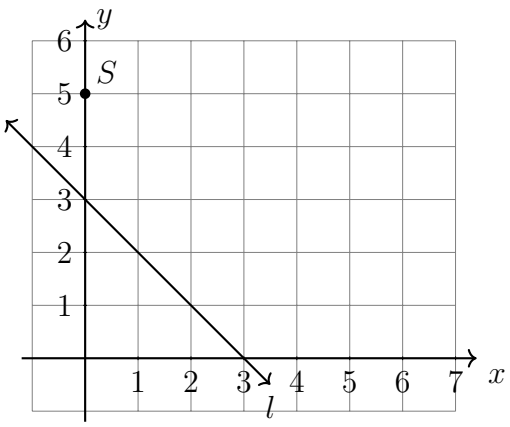
5. The line l is shown on the grid below.

   (a) Write down it's slope, y-intercept.
   $m =$ $b =$

   (b) Write down the equation of line l.

   (c) Draw a line parallel to line l though point S.

   (d) Write down the equation of the second line.



6. The line l has the equation $y = -\frac{3}{5}x + 4$. To each line below, circle whether l is parallel, perpendicular, or neither.

   (a) parallel perpendicular neither $y = \frac{3}{5}x - 2$

   (b) parallel perpendicular neither $y = \frac{5}{3}x + 9$

   (c) parallel perpendicular neither $3x - 5y = -15$

   (d) parallel perpendicular neither $5x - 3y = 6$

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

$y = -4x - 6$ $x - 3y = -21$

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