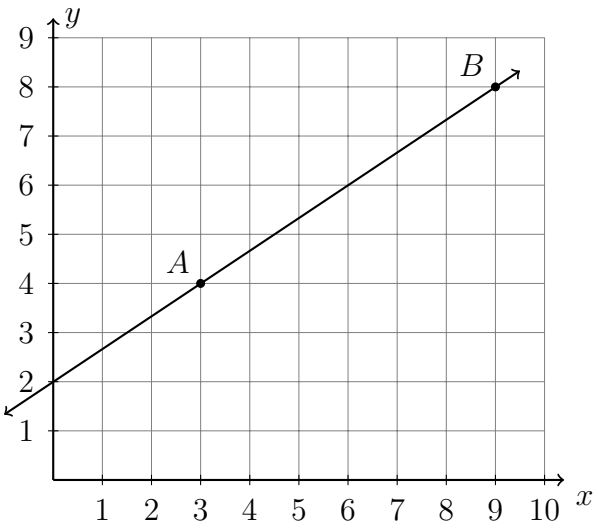
Name:

BECA / Dr. Huson / Geometry 04 Analytic Geometry
4.5 Linear equations

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

1. Do Now: Find the slope of the line through the points $A(3, 4)$, $B(9, 8)$.

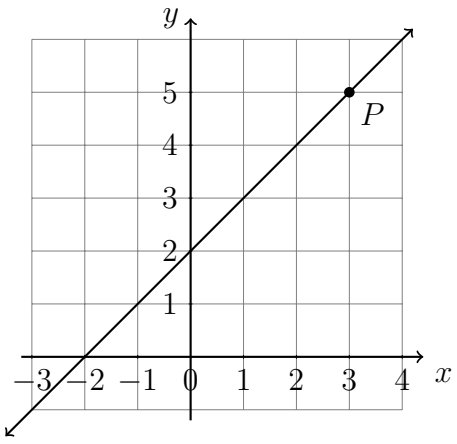


The slope-intercept equation of a line

$y = mx + b$, where m is the slope and b is the y-intercept

2. The line l has the equation $y = \frac{3}{2}x - 1$.
   (a) Write down it's slope and y-intercept. $m =$ $b =$
   (b) Is the point $(4, 4)$ on the line l? Justify your answer.

3. A line is shown on the grid below.
   (a) Write down it's slope, y-intercept.
   $m =$ $b =$
   (b) Write down the equation of the line.
   (c) State the coordinates of the point P.

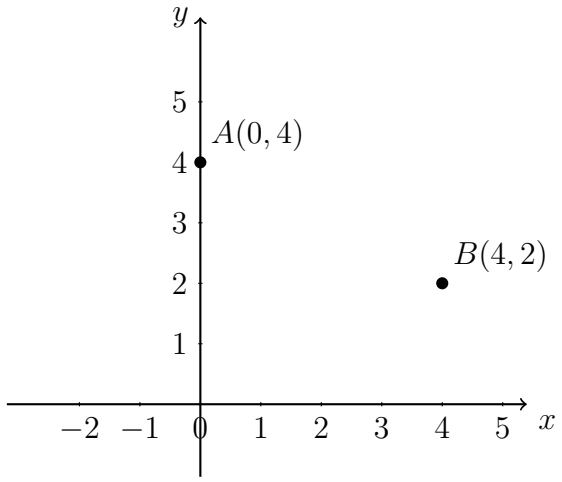


4. Draw a straight line through the points A and B shown on the grid below.

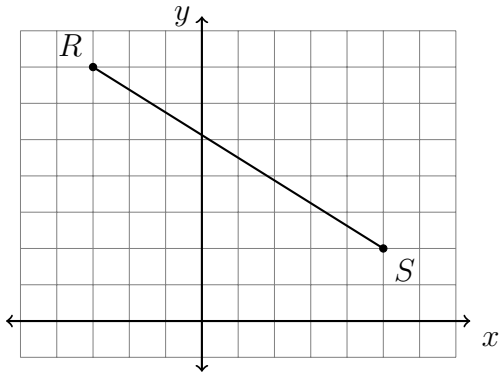
   (a) Write down the line's y-intercept.
   $b =$

   (b) Write down the slope of the line.
   $m =$

   (c) Write down the equation of the line.



5. Find the coordinates of the midpoint M of $\overline{RS}$, $R(-3, 7)$ and $S(5, 2)$. Mark and label it on the graph.



6. Point P partitions $\overline{MN}$, $M = -5$ and $N = 7$, in the ratio $3 : 1$. Find the value of point P. Mark and label P on the graph.