11.16 Pretest: Function parameters

1. The standard form of a linear equation is $ax + by = c$, where x and y are variables and a, b, and c are parameters (fixed numbers).

   For example if the equation of a line is $3x + 2y = 5$, write down the value of each parameter.

   (a) $a =$

   (b) $b =$

   (c) $c =$

2. The slope-intercept form of a linear equation is $y = mx+b$. The parameter m quantifies the slope and b the y-intercept.

   For the equation $y = \frac{1}{2}x - 7$, write down the value of each parameter..

   (a) $m =$

   (b) $b =$

3. The point-slope form of a linear equation is $y - k = m(x - h)$. Again, the parameter m represents the slope. The parameters h the h are the coordinates of a point that the line passes through.

   For the equation $y - 3 = -\frac{3}{5}(x - 7)$, write down the value of each parameter..

   (a) $m =$

   (b) $h =$

   (c) $k =$

   (d) Write down a point that the line passes through as a coordinate pair.

4. Rewrite each equation in the required form.

   (a) $y = 5x - 3$ in the form $ax + by = c$ (b) $y + 3 = 2(x + 1)$ in the form $y = mx + b$

5. (a) Find the slope m of the line $2x + 4y = 12$.

   (b) Write down the slope perpendicular to the line, $m_\perp$.

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

   (a) $m = \frac{1}{2}$ $\quad m_\perp =$ $\quad$ (b) $m = -6$ $\quad m_\perp =$

7. Write down the equation of the line through $(1, -3)$ with a slope of 4.

8. The line segment $\overline{AB}$, $A(2, 1)$ and $B(8, 3)$, is shown below.

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

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

   (c) Write down the slope perpendicular to $\overline{AB}$.

   (d) Write down the equation of the perpendicular bisector of $\overline{AB}$.

   (e) Draw the perpendicular bisector on the graph.