Sketching Linear Equations – ANSWERS
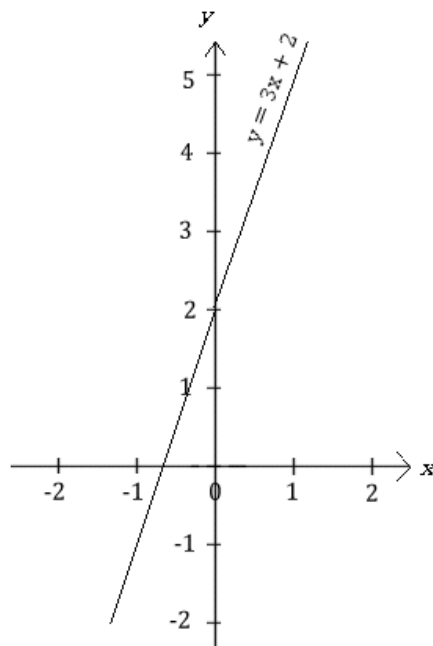
1.

    a. $y = 2$

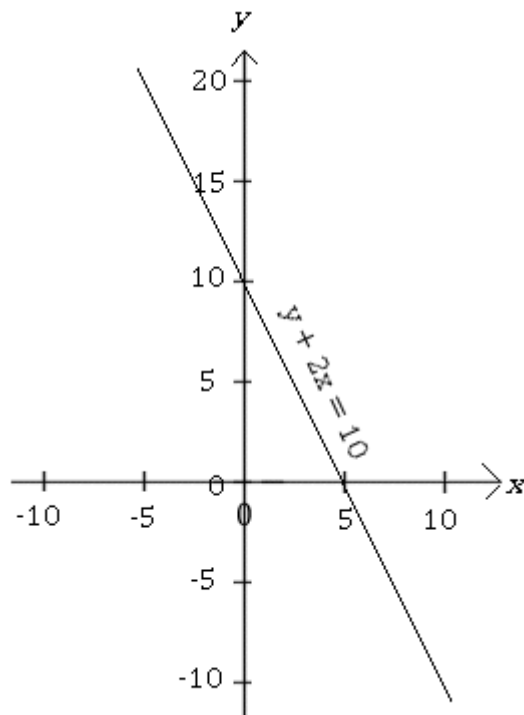   b. $x = -\dfrac{2}{3}$

    c.

2.

    a. $y = 10$

    b. $x = 5$

    c.

    d.   If the equation is rearranged as $y = -2x + 10$ the gradient is -2. A negative gradient means that y decreases as x increases, so the line slopes downwards to the right.

3. It is a straight line graph, so the equation is of the form $= mx + c$. The task is then to determine the parameters m and c .

The constant term c is given by the intercept with the y-axis, so the equation is y=mx+10 .

There two ways of determining the value of m :

  a. It is the gradient which is the change in y when x increases by 1 . A quick glance at the sketch shows y increasing from 0 to 10 when x increases from -2 to 0 . Therefore the gradient is $\frac{10}{2} = 5$.

  b. Alternatively, now that we know what c is, substitute for x and y from any point on the line. An obvious choice would be the intercept with the x-axis at $(-2,0)$. At this point, $0 = m \times -2 + 10$. This gives $-10 = -2m$ so that $m = 5$

The equation is $= 5x + 10$.