

September 20<sup>th</sup>

A curve has equation  $y = 2x^2 + ax + 14$  and passes through (2, 44).

Find where the curve intercepts the x-axis.



Substituting  $x=2, y=44$

Gives  $44 = 2 \times 2^2 + 2a + 14$

Hence  $a = 11$

To find where the curve crosses the x-axis, solve

$$2x^2 + 11x + 14 = 0$$

$$(2x + 7)(x + 2) = 0$$

Hence the curve crosses the x axis at  **$x = -2$  and  $x = -3.5$**