

14th March



Corbettmaths

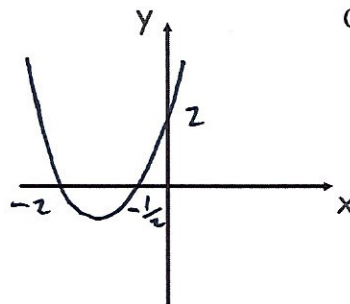
Sketch the graph of

$$y = 2x^2 + 5x + 2$$

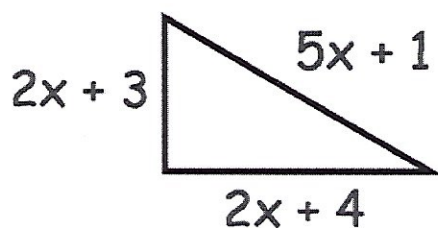
$$(2x+1)(x+2) \quad -\frac{1}{2} \quad -2$$

clearly show the coordinates of any points of intersection with the axes.

$$(-2, 0) \quad (-\frac{1}{2}, 0) \quad (0, 2)$$



Below is a right angled triangle.

Find the possible values of  $x$ .

$$(2x+3)^2 + (2x+4)^2 = (5x+1)^2$$

$$4x^2 + 12x + 9 + 4x^2 + 16x + 16 = 25x^2 + 10x + 1$$

$$8x^2 + 28x + 25 = 25x^2 + 10x + 1$$

$$0 = 17x^2 - 18x - 24$$

$$a = 17 \quad b = -18 \quad c = -24$$

$$x = \frac{18 \pm \sqrt{324 + 1632}}{34}$$

$$\boxed{x = 1.83} \quad \text{or} \quad x = -0.77$$

A function  $f(x)$  is defined as

$$f(x) = \frac{8}{x} \quad -4 \leq x < -1$$

$$= -x^2 - 7 \quad -1 \leq x < 1$$

$$= 4x - 12 \quad 1 \leq x \leq 4$$

Draw the graph of  $y = f(x)$  and state its range.

