

2nd June

Higher Plus 5-a-day



Corbettmaths

Given

$$f(x) = \frac{2x+4}{3}$$

$$y = \frac{2x+4}{3}$$

$$2x = \frac{3y-4}{2}$$

find

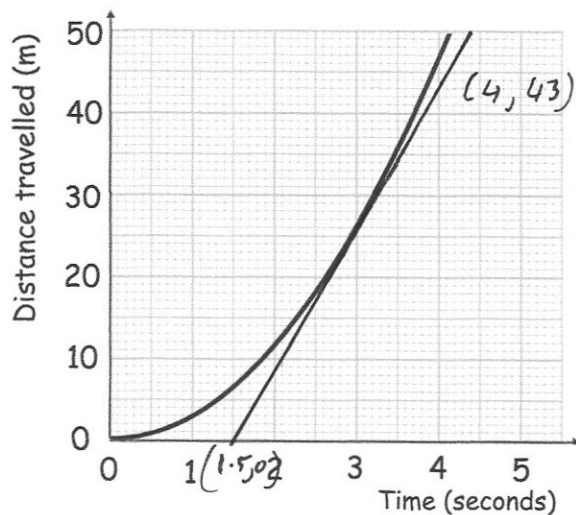
$$f^{-1}(x)$$

$$3y = 2x+4$$

$$f^{-1}(x) = \frac{3x-4}{2}$$

$$2x = 3y-4$$

The graph shows information about part of a dog's journey.



Work out an estimate of the speed of the dog at time 3 seconds.

$$\frac{\text{rise}}{\text{run}} = \frac{43-0}{4-1.5}$$

$$= \frac{43}{2.5}$$

$$= 17.2 \text{ m/s}$$

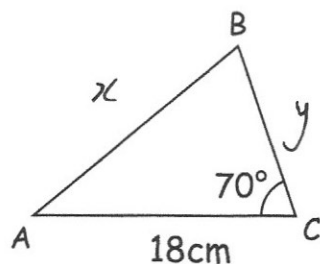
Write  $3x^2 - 12x + 41$  in the form  $a(x+b)^2 + c$

$$3(x^2 - 4x) + 41$$

$$3[(x-2)^2 - 4] + 41$$

$$3(x-2)^2 - 12 + 41$$

$$3(x-2)^2 + 29$$



$$\frac{1}{2} \times 18 \times y \times \sin 70 = 135$$

$$y \sin 70 = 15$$

$$y = 15.962...$$

The area of the triangle is  $135 \text{ cm}^2$ . Find the length of AB.

$$x^2 = 15.962...^2 + 18^2 - 2 \times 15.962... \times 18 \times \cos 70$$

$$x^2 = 382.26...$$

$$x = 19.55 \text{ cm}$$