

16th July

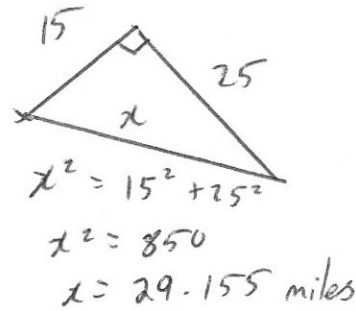
Higher 5-a-day



Corbettmaths

A helicopter flies 15 miles north-east and then 25 miles south-east.

How far, in a straight line, is the helicopter from its starting position?



Solve, giving your answers to one decimal place.

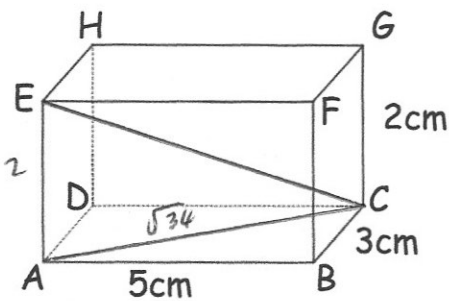
$$2x^2 - x - 9 = 0$$

$a = 2$   
 $b = -1$   
 $c = -9$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{1 \pm \sqrt{1 - (-72)}}{4}$$

$x = 2.4$  or  $x = -1.9$



Find the length of CE

$$AC^2 = 3^2 + 5^2$$

$$AC^2 = 34$$

$$CE^2 = 2^2 + (\sqrt{34})^2$$

$$CE^2 = 38$$

$$CE = \sqrt{38} \quad 6.16\text{cm}$$

$$B = \frac{(x+2)(x-2)}{(x-3)(x-5)}$$

Find B when  $x = -2$

$$B = \frac{0 \times -4}{-5 \times -7}$$

$$B = \frac{0}{35} = 0$$

When  $0 < x < 2$  decide if:

- B is positive
- B is negative
- B is zero
- B could be negative or positive

$$\frac{\text{Positive} \times \text{Negative}}{\text{Negative} \times \text{Negative}} = \frac{\text{Negative}}{\text{Positive}}$$

Negative