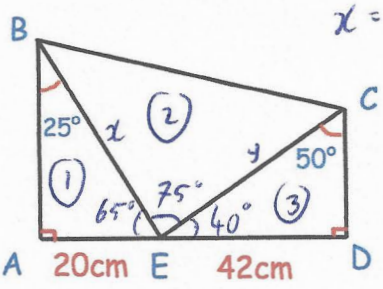
16th April

Corbettmaths



$x = \frac{20}{\sin 25} = 47.324$

$y = \frac{42}{\sin 50}$

$y = 54.82711$

Find the area of ABCD

① : $\frac{1}{2} \times 47.324 \times 20 \times \sin 65 = 428.901$

② : $\frac{1}{2} \times 47.324 \times 54.82711 \times \sin 75 = 1253.114$

③ : $\frac{1}{2} \times 42 \times 54.82711 \times \sin 40 = 740.0859266$

2422.1cm^2

Find the length of BC

$BC^2 = x^2 + y^2 - 2xy\cos 75$

$BC^2 = 47.324^2 + 54.82711^2 - 2 \times 47.324 \times 54.82711 \times \cos 75$

$BC^2 = 3902.489428$

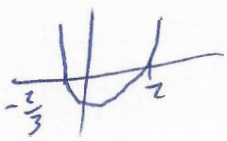
$BC = 62.4699\text{ cm}$

Solve

$3x^2 - 3 > 4x + 1$

$3x^2 - 4x - 4 > 0$

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



$x < -\frac{2}{3}$ or $x > 2$

James has two bags of counters. Each bag has the same number of counters, x. 25

In bag 1, there are 4 red counters and the rest are blue. 21

In bag 2, there are 5 red counters and the rest are blue. 20

James picks a counter at random from bag 1, he notes its colour and then places it into bag 2.

He then picks a counter at random from bag 2.

The probability of choosing a red counter from both bags is $^{12}/_{325}$

Work out the total number of blue counters in the two bags

$P(RR) = \frac{4}{x} \times \frac{6}{x+1} = \frac{12}{325}$

$\frac{24}{x^2+x} = \frac{12}{325}$ (same as $\frac{24}{650}$)

$x^2 + x = 650$

$x^2 + x - 650 = 0$

$(x-25)(x+26) = 0$

$x = 25$ ~~$x = -26$~~