

15th June



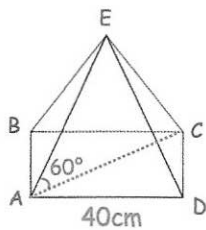
Corbettmaths

Tom and Ben sit their driving test.
The probability Tom passes is 0.4.
The probability that only one man passes is 0.56.

$$\begin{aligned}
 P(\text{Ben pass}) &= y & P(\text{Ben fail}) &= 1-y \\
 0.4(1-y) + 0.6y &= 0.56 \\
 y &= 0.8 \\
 0.6 \times 0.2 &= \boxed{0.12}
 \end{aligned}$$

Find the probability they both fail.

Here is a square based pyramid.



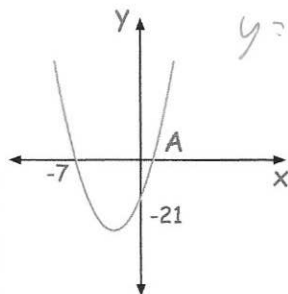
$$\begin{aligned}
 AM &= 20\sqrt{2} \\
 EM &= \tan(60) \times 20\sqrt{2} \\
 &= 20\sqrt{6} \text{ cm}
 \end{aligned}$$

Calculate the volume of the pyramid.

$$\begin{aligned}
 V &= \frac{1}{3} Ah \\
 &= \frac{1}{3} (40 \times 40) \times 20\sqrt{6} \\
 &= 21127.89 \text{ cm}^3
 \end{aligned}$$

Melanie draws the graph of

$$y = x^2 + ax + b \quad b = -21$$



$$\begin{aligned}
 y &= x^2 + ax - 21 \\
 &= (x+7)(x-3)
 \end{aligned}$$

The graph crosses the x-axis at the points $(-7, 0)$ and **A**

The graph crosses the y-axis at the point $(0, -21)$

Find the coordinates of the point A

$$(3, 0)$$

Find the coordinates of the turning point

$$\begin{aligned}
 y &= x^2 + 4x - 21 \\
 y &= (x+2)^2 - 4 - 21 \\
 &= (-2, -25)
 \end{aligned}$$

Shown is a right angled triangle.
Find the possible value(s) of x.

$$\begin{aligned}
 (x+1)^2 + (2x+4)^2 &= (4x-3)^2 \\
 \Rightarrow 11x^2 - 42x - 8 &= 0 \\
 x &= -\frac{2}{11} \text{ or } x = 4 \\
 \boxed{x = 4}
 \end{aligned}$$

