**6th February** **Higher Plus 5-a-day**

Corbettmaths

Write down the exact value of:

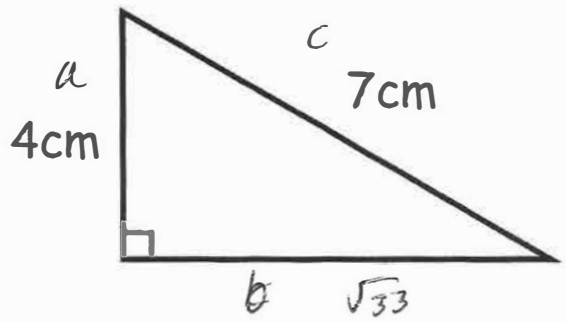
tan 0°

0

Write down the exact value of:

tan 60°

$\sqrt{3}$




Find the area of the triangle.
Give your answer in surd form and as simply as possible

$a^2 + b^2 = c^2$

$16 + b^2 = 49$

$b^2 = 33$

$b = \sqrt{33}$

Area

$\frac{1}{2} \times \sqrt{33} \times 4$

$= 2\sqrt{33}\ cm^2$

Given

$f(x) = 2x + 3$

$g(x) = 4x^2$

Find $fg(x)$

$fg(x) = 2(4x^2) + 3$

$= 8x^2 + 3$

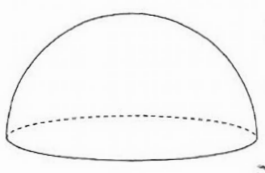
| P | O | L | Y | G | O | N |
|---|---|---|---|---|---|---|

A tile is selected at random, it is **not replaced** and then another tile is selected.

Work out the probability that both cards are O.

$P(OO) = \frac{2}{7} \times \frac{1}{6} = \frac{2}{42}$

$\frac{1}{21}$



$V = \frac{1}{2}\left(\frac{4}{3} \times \pi \times r^3\right)$

$= \frac{1}{2}\left(\frac{4}{3} \times \pi \times 3^3\right)$

$= 18\pi\ cm^3$

The solid hemisphere shown has a radius of 3cm.
The hemisphere is made from a material with density 6.13g/cm³.
Calculate the mass of the hemisphere.

$m = d \times v$

$= 6.13 \times 18\pi = 346.64g$