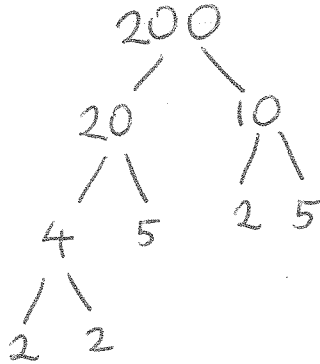


M4 = 14 days to go!

16 (a) Write 200 as a product of its prime factors.

Give your answer in index notation.



Answer $2^3 \times 5^2$ [3]

(b) Hence find the smallest number you can multiply 200 by to make a cube number.

Cube numbers

$$27 = 3^3$$

$$8 = 2^3$$

$$1000 = 2^3 \times 5^3$$

Answer 5 [1]

Must have multiple of 3
as the top power for all

5 A full jar of coffee weighs 670 g. An empty coffee jar weighs 450 g.

Both are measured to the nearest 5 g. ± 2.5 g

Rem

Calculate the maximum weight of coffee in the jar.

empty jar 450 ± 2.5
 $447.5 \text{g} \rightarrow 452.5 \text{g}$

full jar 670 ± 2.5

667.5 672.5

Max weight of coffee

Answer 225 g [3]

$$672.5 - 447.5 = 225$$

17 Calculate the compound interest that £1 600 would earn after three years at 5% interest per annum.

Give your answer correct to the nearest £.

Increases by 5% compound interest
 Multiplying factor $\times 1.05$

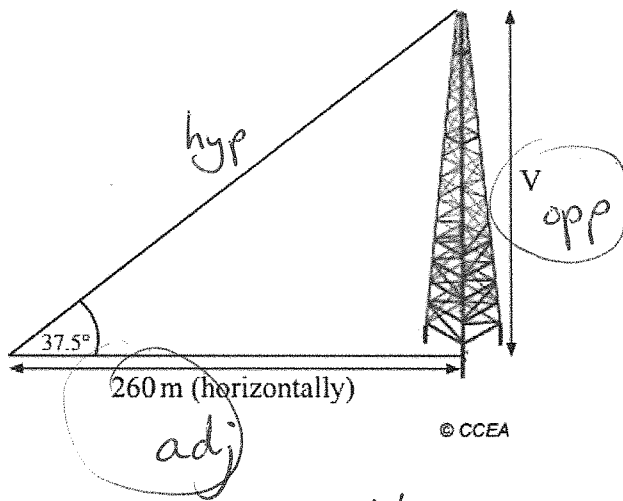
$$1600 \times 1.05 \times 1.05 \times 1.05$$

$$1852.20$$

Answer £ 252.20 interest earned [4]

$$1852.20 - 1600$$

24 Calculate the height V of this vertical radio mast.



Trig.

$\frac{O}{S} = \frac{A}{C} = \frac{O}{H}$

$$\tan 37.5 = \frac{V}{260}$$

$$V = 260 \tan(37.5)$$

$$V = 199.5$$

Answer 199.5 m [3]