

M3 = 14 days to go!

6 Factorise fully each of the following:

(a) $12a + 6$

Factories make brackets

Answer $\underline{6(2a+1)}$ [1]

(b) $y^2 - 6y$

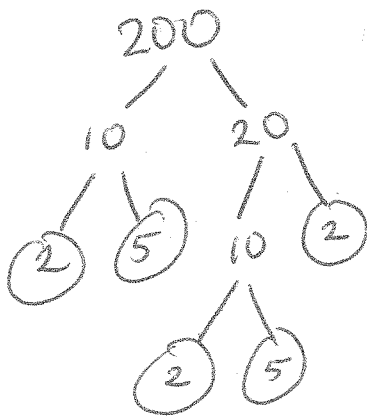
Answer $\underline{y(y-6)}$ [1]

(c) $b + b^2$

Answer $\underline{b(1+b)}$ [1]

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

Give your answer in index notation.



$$200 = 2 \times 2 \times 2 \times 5 \times 5$$

But index

$$2^3 \times 5^2$$

Answer _____ [3]

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

Cube

$$27 = 3^3$$

$$64 = 4^3$$

$$125 = 5^3$$

$$216 = 2^3 \times 3^3$$

Answer $\underline{5}$ [1]

$$512 = 2^6$$

All index for cube numbers are multiples of 3

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 £.

multiplier $\times 1.05$

$$1600 \times 1.05 \text{ for 1 year}$$

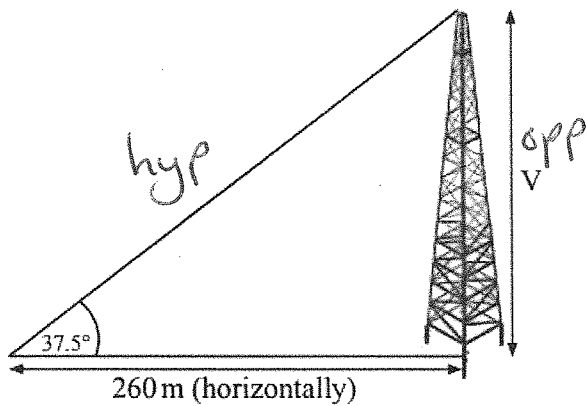
$$\text{2nd year } 1600 \times 1.05^2$$

$$\text{3rd year } 1600 \times 1.05^3 = 1852.20$$

Interest

Answer £ 252.20 [4]

24 Calculate the height V of this vertical radio mast.



Right-angled triangle
so either Trig. or Pyth.
Angle in question
then must be Trig.

adj
S H A C H O T A

$$\text{opp} = 260 \times \tan(37.5)$$

Answer 200 m [3]

$$\text{opp} = 199.5$$