2023/4 GCSE Maths End of Term Assessment 2 - ANSWERS

Q1 either ...

8x4=32cm^2 + 5x2 cm^2 then 32+10=42

Or 4x6=24cm^2 + 9x2=18 cm^2 then 24+18 = 42

Or 9x8=72cm^2 - 5x6cm^2 = 42

Q2 a) 12x6x3 = 216cm^3

b) SA of cube = 54cm^2 / 6 faces of cube = 9cm^2 per face

Each square = sqrt of 9 = 3cm long

Volume of cube = 3x3x3 = 27cm^3

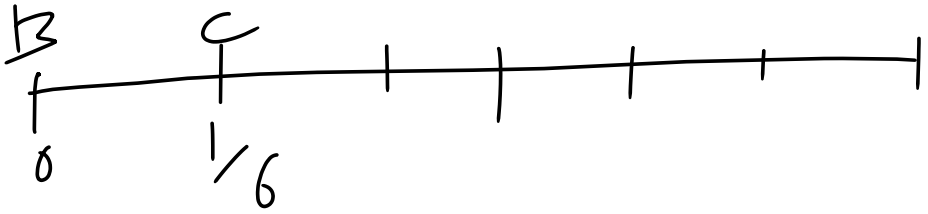
216 (from part a)) / 27 = 8 cubes fit into the cuboid

Q3 180 – 21 – 47 = 112 degrees

Q4 Four triangles x 180 degrees in each triangle = 720 degrees

Q5 B is positioned at the start of the line at '0' zero

C is positioned at 1/6 of the line (the first line after zero)



Q6 a) 2/6 or 1/3

b) 5/6

Q7 $\frac{72 + 83 + 88 + 97 + x}{5} = 90$

340 + x = 90 (5) , X = 450 – 340 , X = 110

Q8 a) 4

b) $\frac{7+4+9+10+4+3+5+8}{8} = \frac{50}{8} = 6.25$.

Q9 $3^{6+5} : 3^7 = 3^{11} : 3^7 = 3^4 : 3^0 = 81:1$ (as n has to be an integer)

Q10 6.16×10^4

Q11 $9.82 \times 10^2 = 982$, $9.81 \times 10^3 = 9810$

So the order is.... 982, 9810, 9812 ... so put 9.82×10^2 , 9.81×10^3, then finally 9812

Q12 9000×0.8^4 = £3686.40

Or 9000/100 x 20 = 1800 then 9000 – 1800 = 7200

Then 7200/100 x 20 = 1440 then 7200 – 1440 = 5760

Then 5760/100 x 20 = 1152 then 5760 – 1152 = 4608

Then 4608/100 x 20 = 921.6 then 4608 – 921.60 = 3686.40 !!!

Q13 a) Show the sum 6000×1.025^2 = £6303.75

or... 6000/100 x 2.5 = 150 then 6000+150 = 6150 (for year 1 end)

then 6150/100 x 2.5 = 153.75 then 6150 + 153.75 = £6303.75 (for year 2 end)

b) Tick box 'More'

6303.75 x 1.024 = 6455.04..... 6455.04 – 6303.75 = interest in yr 3 of £151.29

Then 6455.04 x 10.235 = 6606.73 ..... 6606.73 – 6455.04 = interest in yr 4 of £151.69

151.69 > 151.29 so more money even though the interest rate has fallen.

Q14 Add ten each time.

So... 10n + 1

Q15 Add 3 each time.

So... 3n+10 for the arithmetic sequence

Times by 2 each time. So... ar^{n-1} for the geometric sequence is a=2 r=2 n=8th term

$2 (2)^{8-1} = 2 \times 2^7 = 2 \times 2x2x2x2x2x2x2 = 2^8 = 256$

So 256 in the geometric sequence is same as nth term of arithmetic sequence

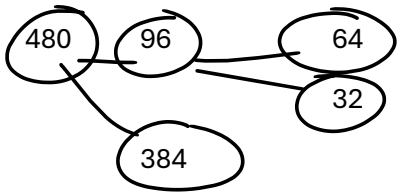
Ie.. $256 = 3n + 10$

$246 = 3n$, $246/3 = n$ .. $n = 82$

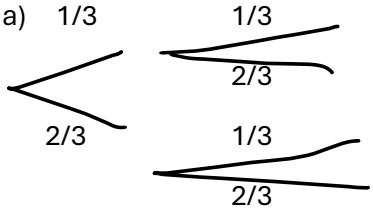
Q16 $9^2 + y^2 = 14^2$

$y^2 = 14^2 - 9^2$, $y = \text{sqrt}(196 - 81) = \text{sqrt } 115 = 10.72$ cm.

Q17

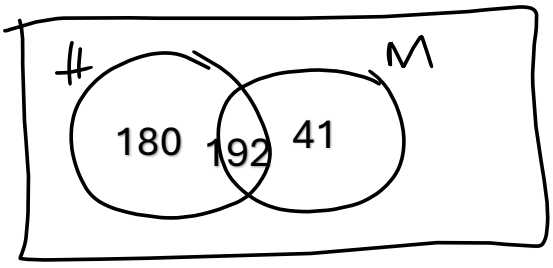


Q18 a)



b) 1/3 x 1/3 = 1/9

Q19



Then House only = 180 people x £8 = £1440

Museum only = 41 people x £7 = £287

Museum and House = 192 people x £12.50 = £2400

Add them all up £1440+

£287

£2400 = £4127