12th October **Higher 5-a-day**

Corbettmaths

The second term of a geometric sequence is 8.
The fourth term of a geometric sequence is 128.

Find the third term of the geometric sequence.

$8 \xrightarrow{\times 4} 32 \xrightarrow{\times 4} 128$

$8 \xrightarrow{\times -4} -32 \xrightarrow{\times -4} 128$

32 or −32

C is the point (6, −3)
D is the point (9, −12)

Does the point E(−17, 66) lie on the straight line passing through CD?

gradient of CD $= \frac{-12--3}{9-6} = \frac{-9}{3} = -3$

$y = -3x + 15$

$(-17, 66)$

$x = -17$

$-3 \times -17 = 51$

$51 + 15 = 66$ ∴ yes

A rectangular field is 30m longer than it is wide.
The area of the field is 5000m²
Calculate the width and length of the field.

$x(x+30) = 5000$

$x^2 + 30x - 5000 = 0$

$a = 1 \quad b = 30 \quad c = -5000$

$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

$x = \frac{-30 \pm \sqrt{900 - (-20000)}}{2}$

$x = \frac{-30 \pm \sqrt{20900}}{2}$

$x = 57.28$ (width), 87.28 (length)

Donation	Frequency	fd
$0 < d \leq 5$	44	110
$5 < d \leq 10$	35	262.5
$10 < d \leq 20$	16	240
$20 < d \leq 50$	3	105
$50 < d \leq 100$	2	150
	÷100	867.5

Paul says the average donation is £10

Do you agree?
Explain your answer.

$867.5 \div 100 = £8.675$

£8.68/£8.67

No the mean is under £10

Simplify

$\frac{x}{5} \times \frac{x+8}{3}$ $\quad \frac{x^2 + 8x}{15}$