ENGLAND GCSE MATHS OCR HIGHER · UNIT 8 · 25 QUESTIONS

Proportion, Rates of Change, Growth and Decay — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button so it can be fixed.

1 **Water flows into a swimming pool at 30 litres per minute. How long does it take to fill 600 litres?**

- **A** 40
- **B** 30
- **C** 10
- **D** 20

Understand It with Pulse | Flag a mistake

2 **A passenger aeroplane travels 900 km in 2 hours. Its average speed is**

- A 900
- B 550
- C 450
- D 350

Understand It with Pulse | Flag a mistake

3 **A bicycle travels 30 km in 2 hours. Its average speed is**

- A 30
- B 10
- C 20
- D 15

Understand It with Pulse | Flag a mistake

4 **A rocket travels 2400 km in 4 hours. Its average speed is**

- A 500
- B 600
- C 700
- D 1200

Understand It with Pulse | Flag a mistake

5 **A red race car worth £20000 loses 20% of its value each year. How much is it worth after one year?**

- A £17000
- B £16000
- C £19600
- D £4000

Understand It with Pulse | Flag a mistake

6 **A yellow school bus travels 150 km in 3 hours. Its average speed, in km/h, is**

- A 25
- B 60
- C 50
- D 450

Understand It with Pulse | Flag a mistake

7 **y is directly proportional to x and y = 4 when x = 2. Find y when x = 7.**

- A 16
- B 28
- C 9
- D 14

Understand It with Pulse | Flag a mistake

8 **y is inversely proportional to x and y = 8 when x = 3. Find y when x = 6.**

- A 16
- B 144
- C 12
- D 4

Understand It with Pulse | Flag a mistake

9 **A population of 500 grows by 5% each year. After 3 years the population is about**

- A 579
- B 1000
- C 575
- D 629

Understand It with Pulse | Flag a mistake

10 Convert 108 km/h into $\frac{m}{s}$

- A 35
- B 30
- C 388.8
- D 60

Understand It with Pulse | Flag a mistake

11 A force of 120 N acts on an area of 6 m^2. The pressure, in $\frac{N}{m^2}$, is

- A 20
- B 25
- C 60
- D 720

Understand It with Pulse | Flag a mistake

12 **A block has mass 240 g and volume 120 cm³. Its density, in g/cm³, is**

A 2

B 4

C 120

D 28800

Understand It with Pulse | Flag a mistake

13 **A passenger train travels 210 km in 2.5 hours. Its average speed, in km/h, is**

A 525

B 94

C 84

D 42

Understand It with Pulse | Flag a mistake

14 **y is inversely proportional to x^2 and y = 12 when x = 1. Find y when x = 6.**

- A 72
- B 0
- C 2
- D 12

Understand It with Pulse | Flag a mistake

15 **Money of £1000 is invested at 5% compound interest per year. How much is it worth after 2 years?**

- A £1100
- B £1050
- C £1102.50
- D £1152.50

Understand It with Pulse | Flag a mistake

16 **On a distance-time graph, a car travels 120 km in 2 hours at a steady speed. The speed of the car, in km/h, is**

A 240

B 118

C 120

D 60

Understand It with Pulse | Flag a mistake

17 **y is directly proportional to x and y = 6 when x = 2. Find y when x = 9.**

A 30

B 54

C 27

D 12

Understand It with Pulse | Flag a mistake

18 **y is inversely proportional to x and y = 8 when x = 6. Find y when x = 3.**

- A 144
- B 4
- C 16
- D 24

Understand It with Pulse | Flag a mistake

19 **Convert 90 km/h into $\frac{m}{s}$**

- A 25
- B 30
- C 324
- D 50

Understand It with Pulse | Flag a mistake

20 A force of 200 N acts on an area of 4 m^2. The pressure, in $\frac{N}{m^2}$, is

- A 50
- B 55
- C 100
- D 800

Understand It with Pulse | Flag a mistake

21 A block has mass 240 g and volume 60 cm^3. Its density, in g/cm^3, is

- A 4
- B 6
- C 120
- D 14400

Understand It with Pulse | Flag a mistake

22 **y is inversely proportional to x^2 and y = 36 when x = 1. Find y when x = 3.**

- A 12
- B 4
- C 108
- D 40

Understand It with Pulse | Flag a mistake

23 **Money of £5000 is invested at 5% compound interest per year. How much is it worth after 2 years?**

- A £5562.50
- B £5512.50
- C £5500
- D £5250

Understand It with Pulse | Flag a mistake

24 **On a distance-time graph, a car travels 90 km in 3 hours at a steady speed. The speed of the car, in km/h, is**

- A 60
- B 270
- C 87
- D 30

Understand It with Pulse | Flag a mistake

25 **y is directly proportional to x and y = 14 when x = 2. Find y when x = 5.**

- A 70
- B 42
- C 12
- D 35

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	D	**10.**	B	**19.**	A
2.	C	**11.**	A	**20.**	A
3.	D	**12.**	A	**21.**	A
4.	B	**13.**	C	**22.**	B
5.	B	**14.**	B	**23.**	B
6.	C	**15.**	C	**24.**	D
7.	D	**16.**	D	**25.**	D
8.	D	**17.**	C		
9.	A	**18.**	C		

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