

GCSE Mathematics

H

Inverse Proportion

Higher Tier | Grades 6-7

Total Marks	Time	Questions
68	68 min	20

Instructions:

- Do not use a calculator when you see: 
- Answer all questions in the spaces provided.
- Show all your working - marks are awarded for method as well as final answers.
- Cross through any work you do not want to be marked.
- Check your answers if you have time at the end.

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Edexcel-style questions**Q1**

Grade 6

Edexcel style

6 workers can complete a job in 8 days. How many days would it take 4 workers to complete the same job?

Answer _____

teachably

[3 marks]**Q2**

Grade 6

Edexcel style

y is inversely proportional to x. When $x = 4$, $y = 15$. Find the value of y when $x = 10$.

Answer _____

teachably

[3 marks]**Q3**

Grade 7

Edexcel style

y is inversely proportional to x^2 . When $x = 2$, $y = 18$. Find the value of y when $x = 3$.

Answer _____

teachably

[3 marks]

Q4

Grade 7

Edexcel style

The time, T hours, taken for a journey is inversely proportional to the average speed, S mph. At a speed of 40 mph, the journey takes 3 hours. Find the time taken at a speed of 60 mph.

Answer _____

teachably

[4 marks]**Q5**

Grade 7

Edexcel style

The intensity of light, I lux, from a bulb is inversely proportional to the square of the distance, d metres, from the bulb. At a distance of 2 m, the intensity is 20 lux. Find the intensity at a distance of 5 m.

Answer _____

teachably

[4 marks]

AQA-style questions**Q6**

Grade 6

AQA style

5 machines can produce an order in 12 hours. How many hours would it take 3 machines?

Answer _____

teachably

[3 marks]**Q7**

Grade 6

AQA style

y is inversely proportional to x. When $x = 5$, $y = 18$. Find the value of y when $x = 9$.

Answer _____

teachably

[3 marks]**Q8**

Grade 7

AQA style

y is inversely proportional to x^2 . When $x = 4$, $y = 5$. Find the value of y when $x = 2$.

Answer _____

teachably

[3 marks]

Q9

Grade 7

AQA style

The number of days, D , needed to build a wall is inversely proportional to the number of builders, B . With 5 builders, it takes 12 days. Find the number of days needed with 8 builders.

Answer _____

teachably

[4 marks]**Q10**

Grade 7

AQA style

The force of attraction, F newtons, between two magnets is inversely proportional to the square of the distance, d cm, between them. At a distance of 3 cm, the force is 36 newtons. Find the force at a distance of 6 cm.

Answer _____

teachably

[4 marks]

OCR-style questions**Q11**

Grade 6

OCR style

8 pipes can fill a tank in 15 minutes. How many minutes would it take 6 pipes?

Answer _____

teachably

[3 marks]**Q12**

Grade 6

OCR style

p is inversely proportional to q . When $q = 6$, $p = 14$. Find the value of p when $q = 21$.

Answer _____

teachably

[3 marks]**Q13**

Grade 7

OCR style

y is inversely proportional to x^2 . When $x = 5$, $y = 4$. Find the value of y when $x = 2$.

Answer _____

teachably

[3 marks]

Q14

Grade 7

OCR style

The pressure, P , of a gas is inversely proportional to its volume, V . When the volume is 8 m^3 , the pressure is 150 pascals. Find the pressure when the volume is 12 m^3 .

Answer _____

teachably

[4 marks]**Q15**

Grade 7

OCR style

The intensity of sound, I , from a speaker is inversely proportional to the square of the distance, d metres, from the speaker. At a distance of 4 m, the intensity is 25 units. Find the intensity at a distance of 10 m.

Answer _____

teachably

[4 marks]

Teachably-style questions**Q16**

Grade 6

Teachably style

4 painters can paint a fence in 18 hours. How many hours would it take 9 painters?

Answer _____

teachably

[3 marks]**Q17**

Grade 6

Teachably style

y is inversely proportional to x. When $x = 8$, $y = 9$. Find the value of x when $y = 6$.

Answer _____

teachably

[3 marks]**Q18**

Grade 7

Teachably style

y is inversely proportional to x^2 . When $x = 3$, $y = 20$. Find the value of y when $x = 6$.

Answer _____

teachably

[3 marks]

Q19

Grade 7

Teachably style

The frequency, f , of a sound wave is inversely proportional to its wavelength, w . When the wavelength is 2.5 m, the frequency is 136 Hz. Find the frequency when the wavelength is 4 m.

Answer _____

teachably

[4 marks]**Q20**

Grade 7

Teachably style

The gravitational force, F , between two objects is inversely proportional to the square of the distance, d , between them. At a distance of 5 m, the force is 18 newtons. Find the force at a distance of 3 m.

Answer _____

teachably

[4 marks]**END OF PAPER****Want help from an expert maths tutor?**

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