INVERSE PROPORTION

Answer all of these questions. Remember to show your working out in all questions.

MAIN QUESTIONS

1. y is inversely proportional to x. When x = 2, y = 6. Find y when x = 3.

2. y is inversely proportional to x. When x = 5, y = 10. Find y when x = 2.

3. y is inversely proportional to x. When x = 4, y = 8. Find x when y = 16.

4. y is inversely proportional to x. When x = 3, y = 12. Find x when y = 9.

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

6. y is inversely proportional to x^2. When x = 3, y = 2. Find y when x = 6.

7. y is inversely proportional to x^2. When x = 1, y = 10. Find x when y = 2.5.

8. y is inversely proportional to x^2. When x = 5, y = 4. Find x when y = 1.

9. y is inversely proportional to $\sqrt{x}$. When x = 9, y = 4. Find y when x = 16.

10. y is inversely proportional to $\sqrt{x}$. When x = 25, y = 10. Find y when x = 100.

11. y is inversely proportional to $\sqrt{x}$. When x = 4, y = 6. Find x when y = 3.

12. y is inversely proportional to $\sqrt{x}$. When x = 16, y = 5. Find x when y = 10.

13. y is inversely proportional to x^3. When x = 2, y = 1. Find y when x = 4.

14. y is inversely proportional to x^3. When x = 1, y = 8. Find y when x = 2.

15. y is inversely proportional to x^3. When x = 3, y = 2. Find x when y = 0.25.

16. y is inversely proportional to x^3. When x = 4, y = 0.5. Find x when y = 4.

MASTER QUESTIONS

M1. The time taken to complete a task is inversely proportional to the number of workers. If 5 workers take 8 hours, how long would 10 workers take?

M2. The intensity of light is inversely proportional to the square of the distance from the source. At 3 metres, the intensity is 100 lux. What is the intensity at 6 metres?

M3. The speed of a car is inversely proportional to the time taken to travel a fixed distance. If the speed is 60 mph, the time taken is 2 hours. What speed is needed to complete the journey in 1.5 hours?

M4. The pressure of a gas is inversely proportional to its volume at constant temperature. If the volume is 4 m^3 at a pressure of 100 kPa, what is the pressure when the volume is 5 m^3?