

INVERSE PROPORTION

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

MAIN QUESTIONS

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| <p>1. If y is inversely proportional to x and $y = 10$ when $x = 2$, find y when $x = 5$</p> | <p>2. Given that p is inversely proportional to q^2 and $p = 8$ when $q = 3$, find p when $q = 6$</p> |
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MASTER QUESTIONS



- M1. The time taken to fill a swimming pool is inversely proportional to the number of pumps used. If 4 pumps take 6 hours to fill the pool, how long would it take 3 pumps?
- M2. The brightness of a light source is inversely proportional to the square of the distance from the source. At 5 metres, the brightness is 100 lux. What is the brightness at 10 metres?
- M3. The number of days a bag of rice lasts is inversely proportional to the number of people eating it. If 5 people can finish the bag in 12 days, how many days will it last for 8 people?
- M4. The resistance of a wire is inversely proportional to the square of its diameter. If a wire of diameter 2mm has a resistance of 50 ohms, what is the resistance of a wire of diameter 5mm?
- M5. The time taken to complete a task is inversely proportional to the number of workers. If 6 workers take 9 hours, how many workers are needed to complete the task in 6 hours?

- M6.** The gravitational force between two objects is inversely proportional to the square of the distance between them. If the force is 64 newtons at 3 metres, what is the force at 12 metres?
- M7.** The number of sweets shared among children is inversely proportional to the number of children. If 20 sweets are shared among 4 children, how many sweets would each child get if there were 5 children?
- M8.** The speed of a car is inversely proportional to the time taken to travel a fixed distance. If the car travels at 60 mph and takes 2 hours, how long would it take at 80 mph?
- M9.** The pressure of a gas is inversely proportional to its volume at constant temperature. If the pressure is 150 kPa when the volume is 4 m³, what is the pressure when the volume is 6 m³?
- M10.** The number of tiles needed to cover a floor is inversely proportional to the square of the side length of each tile. If 100 tiles of side 10cm are needed, how many tiles of side 20cm are needed?