## **INDIRECT VARIATION WORKSHEET**

- 1. *y* is inversely proportional to *x*. Given that y = 9 when x = 8, find *y* when x = 6.
- 2. *y* is inversely proportional to *x*. Given that y = -50 when x = 3, find *y* when x = -10.
- 3. The time taken to build a brick wall is inversely proportional to the number of workers. 3 workers took 30 hours to build a wall. Calculate the time it would have taken 5 workers to build this wall.
- 4. *y* is inversely proportional to the square of *x*. Given that y = 2 when x = 6, find the value of *y* when x = 2.
- 5. *y* is inversely proportional to the square of *x*. Given that y = 3 when x = 2, find *y* when x = 5.
- 6. *y* is inversely proportional to the square of *x*. Given that y = 24 when x = 2, find *y* when x = 8.
- 7. It is given that y is inversely proportional to the square of x and that y = 48 when  $x = \frac{1}{2}$ . Find
  - (a) the formula for y in terms of x
  - (b) the values of x when y = 3
- 8. *y* is inversely proportional to the cube of *x*. When x = 2, y = 9. Find *y* when x = 5.
- 9. p is inversely proportional to q. It is known that p = 15 for a particular value of q. Write down the value of p when this value of q is doubled.
- 10. *y* is inversely proportional to the square of *x*. When x = 4, y = 10.
  - (a) Find the value of y when x = 10.
  - (b) Describe the effect on *y* when *x* is halved.
- 11. *y* is inversely proportional to *x*. The table shows some values of *x* and *y*.

x	3	4	q	n
у	20	р	5	т

- (a) Find p
- (b) Find q
- (c) Express *m* in terms of *n*.
- 12. *y* is inversely proportional to  $x^2$ . Some values of *y* and *x* are given in the table below.

x	3	2	q
у	4	р	1

Find

- (a) the formula for y in terms of x,
- (b) the value of p,
- (c) the two values of *q*.

## ANSWERS

1. y = 122. y = 153. 18 hours 4. y = 185.  $y = \frac{12}{25}$ 6. y = 1.57. (a)  $y = \frac{12}{x^2}$  (b)  $x = \pm 2$ 8.  $y = \frac{72}{125}$ 9. p = 7.510. (a) y = 1.6 (b) y is increased by 4 times 11. (a) p = 15 (b) q = 12 (c)  $m = \frac{60}{n}$ 12. (a)  $y = \frac{36}{x^2}$  (b) p = 9 (c)  $q = \pm 6$