

Inverse Variation

1. The gravitational force, F , between any two objects varies inversely as the square of the distance, d , between them.
 - (a) Find a formula connecting F and d , given $F = 5$ when $d = 4$.
 - (b) Calculate F when $d = 2$.

2. y varies inversely with x . When $y = 8$, $x = 9$.
 - (a) Find a formula connecting y and x .
 - (b) If x changes to 6 what will y be?

3. (a) A varies inversely as the square root of y .
Find a formula connecting A and y given $A = 3$ when $y = 64$.
 - (b) Find A when $y = 25$,

4. The number of days, N , it takes a farmer to harvest his corn varies inversely with the number of combine harvesters, c , he uses.
 - (a) Given it would take 9 days to harvest the corn using 2 combine harvesters, find a formula connecting N and c .
 - (b) How long would it take to harvest the corn if he uses 3 combine harvesters?

5. The height of a cylinder, h , of fixed volume varies inversely as the square of the radius, r , of the base of the cylinder.
 - (a) Given that $h = 9$ when $r = 4$, find a formula connecting h and r .
 - (b) If r is now 3 what will h become?

6. T varies inversely as the cube of s .
 - (a) Given $T = 8$ when $s = 2$, find a formula connecting T and s .
 - (b) If $s = 4$, what is the value of T ?

7. G varies inversely as the square root of h .

When $G = 3.6$, $h = 100$. Find G when $h = 16$.

8. L varies inversely as the square of m .

When $L = 0.25$, m is 3. Find L when $m = 2$.

9. The volume, V , of gas in a balloon varies inversely with the air pressure, P , acting on the surface of the balloon. The volume is 3600 cm^3 when the pressure is 20 poundals. Calculate the volume of gas if the pressure is reduced to 18 poundals.