

**Inverse proportion**

$y \propto \frac{1}{x}$  just means 'y is inversely proportional to x'. This

can also be written as  $y \propto \frac{1}{x}$  or sometimes as 'y varies inversely as x'

(1) y is inversely proportional to x. (a) Write an equation connecting y and x (b) Find the value of k, the constant of proportionality and (c) Complete the table below.

x	2	5	6	4
y		12		

(2)  $y \propto \frac{1}{x}$ . Find the constant of proportionality and complete the table below.

x	1	2	12	
y		3		12

(3) y varies inversely as x. Complete the table below

x			100	200
y	30	60	300	

(4) y is inversely proportional to x. When y is 12, x is 3. Find y when x is 4 and find x when y is 72.

(5)  $s \propto \frac{1}{t}$ . When s is 4, t is 5. Find s when t is 10 and find t when s is 200.

(6) y is inversely proportional to  $x^2$ . When y is 1, x is 3. Find y when x is 6 and find x when y is 3. Simplify your answer.

(7)  $y \propto \frac{1}{\sqrt{x}}$ . y is 3 when x is 16. Find the constant of proportionality. Now find y when x is 400 and find x when y is 24

(8) The wavelength of sound waves is inversely proportional to their frequency. When the wave length is .5m the frequency is 800Hz. Find (a) The wavelength when the frequency is 300HZ and (b) the frequency when the wavelength is 3m.

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