

a)
 y is inversely proportional to the square of x.
 y = 2 when x = 5.

Find a formula linking x and y.

Write the relationship using the proportionality symbol	$y \propto \frac{1}{x^2}$
Write the relationship as a formula	$y = \frac{k}{x^2}$
Substitute the known values of y and x	$2 = \frac{k}{5^2}$
Rearrange to find the value of k	$2 \times 5^2 = k$ $k = 2 \times 25 = 50$
Re-write the formula with the identified value of k	$y = \frac{50}{x^2}$

b)
 y is inversely proportional to the square root of x.
 y = 3 when x = 16.

Find a formula linking x and y.

Write the relationship using the proportionality symbol	$y \propto \frac{1}{\sqrt{x}}$
Write the relationship as a formula	$y = \frac{k}{\sqrt{x}}$
Substitute the known values of y and x	$3 = \frac{k}{\sqrt{16}}$
Rearrange to find the value of k	
Re-write the formula with the identified value of k	

c)
y is inversely proportional to the cube of x.
y = 4 when x = 3.

Find a formula linking x and y.

Write the relationship using the proportionality symbol	$y \propto \frac{1}{x^3}$
Write the relationship as a formula	$y = \frac{k}{x^3}$
Substitute the known values of y and x	
Rearrange to find the value of k	
Re-write the formula with the identified value of k	

d)
y is inversely proportional to the square root of x.
y = 5 when x = 36.

Find a formula linking x and y.