

## VARIATIONS

### Exercise 5.3

- a) Given that  $y$  varies inversely as the square of  $x$  and  $y = 1$  when  $x = 4$ , find the value of  $y$  when  $x = 8$ .

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- b) Given that  $x \propto \frac{1}{y}$  and  $x = 7\frac{1}{2}$  When  $y = 4$ , find the law connecting them.

Hence, find the value of  $x$  when  $y = 12$  and also the value of  $y$  when  $x = 20$ .

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- c) Given that  $p$  is inversely- proportional to  $q$  and  $p = 5/2$  when  $q = 2$ , find  $p$  when  $q = 4$

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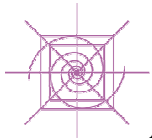
- d) Given that  $x \propto \frac{1}{y^2}$  and  $x = 8$  When  $y = 2$ , find  $x$  when  $p = 4$ .

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- e) If  $a$  varies indirectly as  $b$  and  $a=3$  when  $b=4$ , find the formula connecting them.

Hence, find the value of  $y$  when  $x = 6$ .

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f) Complete the following:

i)  $y \propto \frac{1}{x} \Rightarrow x \propto$  \_\_\_\_\_

ii)  $x = kx^2 \Rightarrow x =$  \_\_\_\_\_

iii)  $A \propto V^{\frac{3}{2}} \Rightarrow V \propto$  \_\_\_\_\_

iv)  $T \propto \sqrt{l} \Rightarrow l \propto$  \_\_\_\_\_

v)  $A \propto r \Rightarrow r \propto$  \_\_\_\_\_