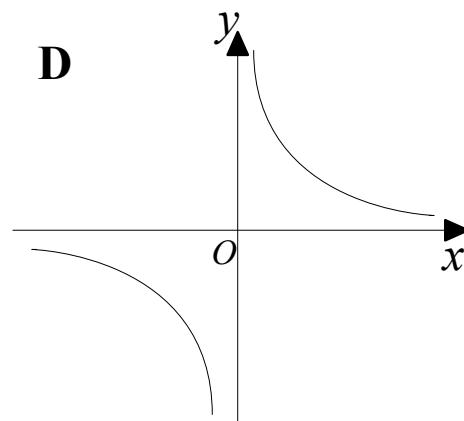
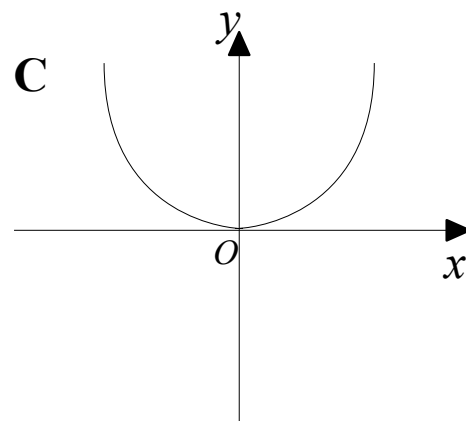
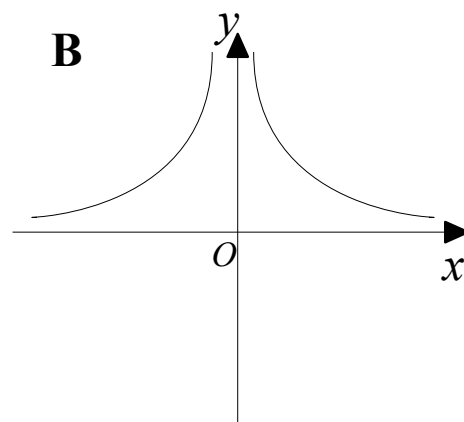
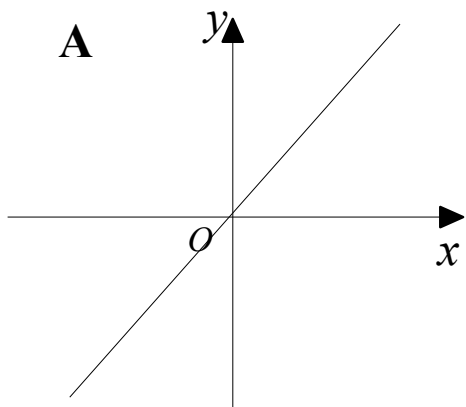


1 Here are four graphs.



Match each graph with a statement below.

- $y$  is directly proportional to  $x$
- $y$  is inversely proportional to  $x$
- $y$  is directly proportional to  $x^2$
- $y$  is inversely proportional to  $x^2$

(2 marks)

2  $a$  is directly proportional to  $b$

When  $a = 7$ ,  $b = 28$

Find the value of  $b$  when  $a = 5$

(3 marks)

3  $c$  is inversely proportional to  $d$

When  $c = 3$ ,  $d = 8$

Find the value of  $c$  when  $d = 2$

(3 marks)

4  $e$  is directly proportional to  $f$

When  $e = 3$ ,  $f = 36$

Find the value of  $f$  when  $e = 4$

(3 marks)

5  $g$  is directly proportional to the square root of  $h$

When  $g = 18$ ,  $h = 16$

Find the possible values of  $h$  when  $g = 2$

(3 marks)

6  $y$  is inversely proportional to  $x$

When  $y = 15$ ,  $x = 4$

Find the value of  $y$  when  $x = 12$

**(3 marks)**

7  $x$  is inversely proportional to the square root of  $y$

When  $x = 12$ ,  $y = 9$

Find the value of  $x$  when  $y = 81$

**(3 marks)**

8  $y$  is inversely proportional to the cube of  $x$

When  $y = 250$ ,  $x = 0.2$

Find the value of  $y$  when  $x = 0.5$

**(3 marks)**

9  $x$  is directly proportional to the cube of  $y$

When  $x = 32$ ,  $y = 0.4$

Find the value of  $y$  when  $x = 256$

**(3 marks)**

10 The table shows pairs of values for  $x$  and  $y$

|     |    |    |
|-----|----|----|
| $x$ | 2  | 3  |
| $y$ | 32 | 72 |

(i) Which of the following statements is correct?

$$y \propto x$$

$$y \propto x^2$$

$$y \propto x^3$$

(ii) Write a formula for  $y$  in terms of  $x$

**(4 marks)**

11 The table shows pairs of values for  $x$  and  $y$

|     |     |     |
|-----|-----|-----|
| $x$ | 4   | 5   |
| $y$ | 256 | 500 |

(i) Which of the following statements is correct?

$$y \propto x$$

$$y \propto x^2$$

$$y \propto x^3$$

(ii) Write a formula for  $y$  in terms of  $x$

**(4 marks)**