

**Q1.**

$y$  is directly proportional to  $\sqrt{x}$

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|-----|----|-----|
| $x$ | 36 | $a$ |
| $y$ | 2  | 5   |

Work out the value of  $a$ .

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Answer .....

**(Total 4 marks)**

**Q2.**

The fare, £ $y$ , for a journey is directly proportional to the square root of the distance,  $x$  miles.

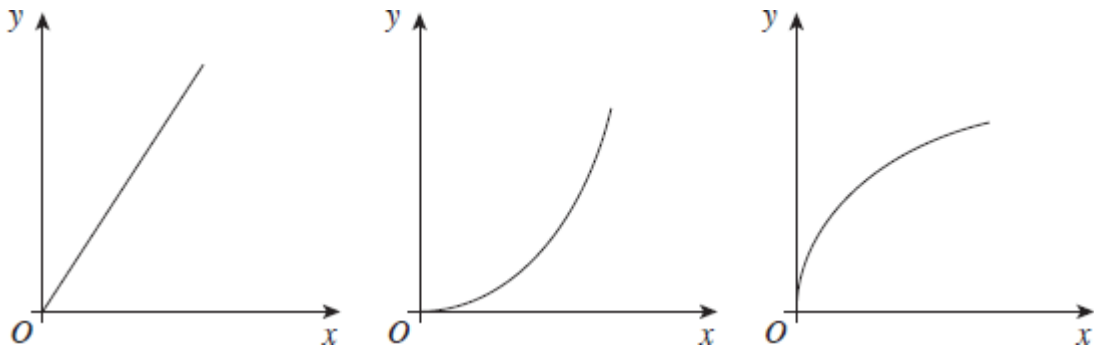
(a) Which sketch graph represents this information?

Circle the correct letter.

**A**

**B**

**C**



(1)

(b) A 100 mile journey costs £36

What is the cost of a 250 mile journey?  
 Give your answer to the nearest pound.

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Answer £ .....

(4)  
 (Total 5 marks)

**Q3.**  $R$  is inversely proportional to  $A$ .

$R = 12.1$  when  $A = 1.5$

(a) Work out a formula connecting  $R$  and  $A$ .

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Answer .....

(3)

- (b) Work out the value of  $R$  when  $A = 4$

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Answer .....

(2)

(Total 5 marks)

**Q4.**  $y$  is directly proportional to  $x$ .

When  $y = 28$ ,  $x = 7$

- (a) Work out an equation connecting  $y$  and  $x$ .

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Answer .....

(3)

- (b) Work out the value of  $y$  when  $x = 12$

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Answer .....

(2)

(Total 5 marks)

**Q5.**  $y$  is **inversely** proportional to  $x$ .

When  $y = 5$ ,  $x = 9$

(a) Work out an equation connecting  $y$  and  $x$ .

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Answer .....

(3)

(b) Work out the value of  $y$  when  $x = 15$

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Answer .....

(2)

(Total 5 marks)

**Q6.**  $M$  is directly proportional to  $r^6$

When  $r = 5$ ,  $M = 200$

(a) Work out the value of  $M$  when  $r = 8$

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Answer .....

(4)

(b) Work out the value of  $r$  when  $M = 3125$

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Answer .....

(3)  
 (Total 7 marks)

**Q7.**  $y$  is inversely proportional to the square of  $x$ .

When  $x = 3$ ,  $y = 8$

(a) Work out an equation connecting  $y$  and  $x$ .

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Answer .....

(3)

(b) Work out the value of  $y$  when  $x = 12$   
 Give your answer as a fraction in its simplest form.

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Answer .....

(2)  
(Total 5 marks)

**Q8.**  $W$  is inversely proportional to  $x$ .

When  $W = 6$ ,  $x = 20$

Work out the value of  $W$  when  $x = 24$

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Answer .....

(Total 4 marks)