

Proportion

Qu 1) The time in minutes (T) for meals to be served at a busy restaurant is inversely proportional to the square of the number of waiters (W) working at that time.

It takes 20 minutes for meals to be served when 12 waiters are working.

(a) Find an equation connecting T and W .

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Answer

(3)

(b) What is the minimum number of waiters that must be working for a meal to be served within 30 minutes?

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Answer

(3)

(Total 6 marks)

Qu 2) The area of the screen of a television set is A square inches.
The length of the diagonal of the screen is d inches.
 A is directly proportional to the square of d .

A television set with an area of 90 square inches has a diagonal of length 15 inches.

(a) Find an equation connecting A and d .

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Answer

(3)

(b) Find the area of the screen of a television set with a diagonal of length 20 inches.

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Answer square inches

(1)

(c) Another television set has a screen with an area of 250 square inches.

Find the length of its diagonal.

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Answer inches

(3)

(Total 7 marks)

Qu 3)

(a) P is inversely proportional to Q .

When $P = 100$, $Q = 32$

Express P in terms of Q .

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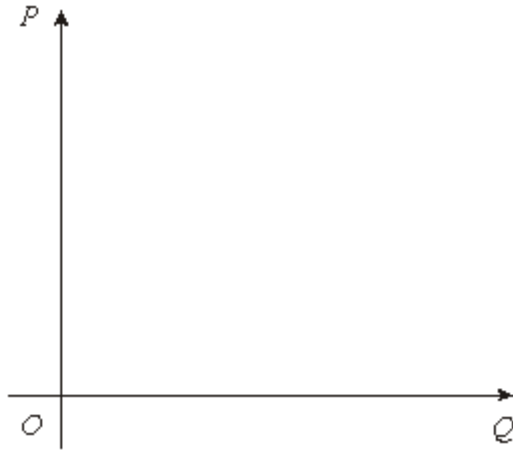
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Answer

(3)

(b) P and Q are positive quantities.

Sketch a graph of the relationship between P and Q on this diagram.



(1)

(c) Calculate the value of Q when P is twice as big as Q .

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Answer

(2)
 (Total 6 marks)

Qu 4) y is directly proportional to the square of x .
 When $y = 5$, $x = 4$.
 Find the value of y when $x = 8$.

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Answer

(Total 3 marks)