

Exercise 8B

Q1

Answer:

We have:

Product of the extremes = $30 \times 60 = 1800$ Product of the means = $40 \times 45 = 1800$ Product of extremes = Product of means

Hence, 30: 40:: 45: 60

Q2

Answer:

We have:

Product of the extremes = $36 \times 7 = 252$ Product of the means = $49 \times 6 = 294$ Product of the extremes \neq Product of the means

Hence, 36, 49, 6 and 7 are not in proportion.

Q3

Answer:

Product of the extremes = $2 \times 27 = 54$ Product of the means = $9 \times x = 9x$

Since 2 : 9 :: x : 27, we have: Product of the extremes = Product of the means

 $\Rightarrow 54 = 9x$

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\Rightarrow x = 6
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Q4

Answer:

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Product of the extremes = 8 \times 35 = 280
Product of the means = 16 \times x = 16x
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Since 8: x:: 16: 35, we have:

Product of the extremes = Product of the means

 \Rightarrow 280 = 16x

 $\Rightarrow x = 17.5$

Q5

Answer:

Product of the extremes = $x \times 60 = 60x$ Product of the means = $35 \times 48 = 1680$

Since x: 35 :: 48 : 60, we have:

Product of the extremes = Product of the means

 \Rightarrow 60x= 1680

 $\Rightarrow x = 28$

Q6

Answer:

(i) Let the fourth proportional be x.

Then, 8:36::6:x

$$8 \times x = 36 \times 6$$

 $\Rightarrow 8x = 216$

 $\Rightarrow x = 27$

Hence, the fourth proportional is 27.

(ii) Let the fourth proportional be x.

Then, 5:7::30:x

 $\Rightarrow 5 \times x = 7 \times 30$

 $\Rightarrow 8x = 216$

 $\Rightarrow 5x = 210$

 $\Rightarrow x = 42$

Hence, the fourth proportional is 42.

(iii) Let the fourth proportional be x.

Then, 2.8 imes x = 14 imes 3.5

 $\Rightarrow 8x = 216$

 $\Rightarrow 2.8x = 49$

 $\Rightarrow x = 17.5$

Hence, the fourth proportional is 17.5.

Q7

Answer:

36, 54 and x are in continued proportion.

Then, 36:54::54:x

 $\Rightarrow 36 \times x = 54 \times 54$

[Product of extremes = Product of means]

 $\Rightarrow 36x = 2916$

 $\Rightarrow x = 81$

Q8

Answer:

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27, 36 and x are in continued proportion.
Then, 27:36::36:x
⇒ 27×x = 36 ×36 [Product of extremes = Product of means]
\Rightarrow 27x = 1296
\Rightarrow x = 48
Hence, the value of x is 48.
Q9
Answer:
(i) Suppose that x is the third proportional to 8 and 12.
Then, 8:12::12:x
\Rightarrow 8 \times x = 12 \times 12
                                                    (Product of extremes = Product of means )
\Rightarrow 8x = 144
\Rightarrow x = 18
Hence, the required third proportional is 18.
(ii) Suppose that x is the third proportional to 12 and 18.
Then, 12:18::18:x
\Rightarrow 12 \times x = 18 \times 18
                                                   (Product of extremes = Product of means )
\Rightarrow 12x = 324
\Rightarrow x = 27
Hence, the third proportional is 27.
(iii) Suppose that x is the third proportional to 4.5 and 6.
Then, 4.5:6::6:x
\Rightarrow 4.5 \times x = 6 \times 6
                                                    (Product of extremes = Product of means )
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