Unitary Method RS Aggarwal Class 7 Maths Solutions Exercise 9B

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Q1

Answer :

48 men can dig a trench in 14 days.
1 man can dig the trench in 14 × 48 days. [less men, more days]
Therefore, 28 men can dig the trench in $\frac{14\times48}{28}$ days = 24 days [more men, less days]
Hence, 28 men will take 24 days to dig a similar trench.

Q2

Answer :

No. of men required to reap the field in 30 days = 16
No. of men required to reap the field in 1 day = 16 ×30 (less days, more men)
Now, no. of men required to reap the field in 24 days = $\frac{16\times30}{24}$ = 20 (more days, less men)

∴ 20 men are required to reap the field in 24 days.

Read More about Ratio and Proportion

Q3

Answer :

Number of cows that can graze the field in 13 days = 45
Number of cows that can graze the field in 1 day = 45 ×13 [Less days, more cows]
Therefore, number of cows that can graze the field in 9 days = $\frac{45\times13}{9}$ = 65 [More days, less cows]

Hence, 65 cows can graze the field in 9 days.

Q4

Answer :

Time taken by 16 horses to consume the corn = 25 days
Time taken by 1 horse to consume the corn = 25×16 [less horses, more time taken]
Time taken by 40 horses to consume the corn = $\frac{25\times16}{40}$= 10 days [more horses, less time taken]

Hence, 40 horses would consume the same quantity of corn in 10 days.

Q5

Answer :

Days taken to finish the book if 18 pages are read everyday = 25
Days taken to finish the book if 1 page is read everyday = 18 ×25 [less pages, more days]
Now, days taken to finish the book if 15 pages are read everyday = $\frac{18\times25}{15}$ = 30 [more pages, less days]
Hence, the girl will take 30 days to finish the book if she reads 15 pages everyday.

Q6

Answer :

Time taken to type 40 words per minute = 24 min
Time taken to type a word per minute = 24×40 min
Now, time taken to type 48 words per minute = $\frac{24\times40}{48}$ = 20 min

Hence, Geeta will take 20 minutes to type the same document if her typing speed is 48 words/min.

Q7

Answer :

Time taken to cover the distance at a speed of 45 km/h = 3 h 20 min = 200 min
Time taken to cover the distance at a speed of 1 km/h = 45 × 3.33 min [less speed, more time]
Time taken to cover the distance at a speed of 36 km/h = $\frac{45\times3.33}{36}$ = 4.1625 h ≈ 4 h 10 min

Hence, the bus will take 4 h 10 min to cover the distance if its speed is 36 km/h.

Q8

Answer :

Time taken to make 240 tonnes of steel = 30 days
Time taken to make 1 tonne of steel = 30 × 240 days
Now, time taken to make 300 or (240 + 60) tonnes of steel = $\frac{30\times240}{300}$ = 24 days

∴ The materials will last for 24 days if 60 more tonnes of steel is to be made that month.

Q9

Answer :

Initially, the contractor had 210 men for 60 days. After 12 days, 70 more men joined.

210 men can finish the work in 48 days
1 man can finish the work in 210×48 days
Now, 280 men can finish the work in $\frac{210\times48}{280}$ days = 36 days.

Hence, it will take 36 days to finish the remaining work.

Q10

Answer :

No. of men for which the provision will last for 25 days = 360
No. of men for which the provision will last for 1 day = 360 ×25
Now, no. of men for which the provision will last for 30 days = $\frac{360\times25}{30}$ = 300

∴ 60 men, i.e., (360 − 300), must be transferred to another camp so that the provision lasts for 30 days.

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Answer :

Number of days for which the food is sufficient for 120 men = 195
Number of days for which food is sufficient for 1 man = 120×195
Number of days for which food is sufficient for 90 men = $\frac{120\times195}{90}$ = 260

Hence, the food will last for 260 days.

Q12

Answer :

We are given that in a fort, 1200 soldiers had enough food for 28 days.
Let *x* soldiers left after 4 days, thus, remaining soldiers = 1200 - *x*
Now, for these remaining soldiers food lasts for 32 days.
As number of soldiers decrease, food lasts long.

Thus, situation after 4 days is

$$1200 \times 24 = (1200 - x) \times 32$$
$$\Rightarrow (1200 - x) = \frac{1200\times24}{32}$$
$$\Rightarrow 1200 - x = 900$$
$$\Rightarrow x = 1200 - 900$$
$$\Rightarrow x = 300$$

Thus, 300 soldiers left the fort after 4 days