(1) 24 identical article cost is Rs. 108

Therefore, 1 identical article cost Rs. 108 / 24

40 similar article cost $\frac{108}{24}$ x 40

= Rs.180

Ans. The cost of 40 similar article cost Rs. 180

(2) 15 man can complete a piece of work in 30 days

Therefore, 1 man can complete 30 x 15 days

18 man complete it = $\frac{30 \ x \ 15}{18}$

= 25 days

(3) To complete a work in 28 days men required 60

Therefore, in 1 days men required 60 x 28

In 40 days men required = $\frac{60 \ x \ 28}{40}$ = 42 men

Ans. 42 men required to complete it.

(4) After 10 days,

For 450 soldiers, provisions are sufficient for (40 – 10) days = 30 days

For 1 soldier, the provisions are sufficient for (450 x 30) days

And for (450 + 90= 540) soldiers, the provisions are sufficient for $\frac{450 \ x \ 30}{540}$ = 25 days

Ans is 25 days.

(5) A garrison has sufficient provisions for 480 men for 12 days

Therefore, 1 man has 480 x 12 days

Afterthat, (480 – 160 = 320) men has $\frac{480 \ x \ 12}{320}$ = 18 days.

Answer: 18 days will the provision last.

(6) $\frac{3}{5}$ quintal of wheat costs Rs. 210

Therefore 1 quintal of wheat cost $\frac{210}{\frac{3}{5}}$ = 210 x $\frac{5}{3}$ = 350

Rs. 350

1 quintal of wheat cost Rs. 350

Therefore, 0.4 quintal cost 350 x 0.4 = 130.0

Ans. 0.4 quintal of wheat cost Rs. 130

(7) $\frac{2}{9}$ of a property costs 252000

1 of a property cost $\frac{252000}{\frac{2}{9}}$ = 252000 x $\frac{9}{2}$

$\frac{4}{7}$ of a property cost 252000 x $\frac{9}{2}$ x $\frac{4}{7}$ = 648,000

Ans is. 648,000

(8) (i) 4 man earn in one day Rs. 360

Therefore, 1 man earn in one day $\frac{360}{4}$ = Rs. 90

(ii) 6 women earn in one day Rs. 360

Therefore, 1 woman earn in one day $\frac{360}{6}$ = Rs. 60

(iii) 6 men earn in one day (6 x 90 = 540) & 4 women earn (4 x 60 = 240).

Total of : 540 + 240 = Rs. 780

(9) 16 boys bill announced = Rs. 114.40

Therefore, 1 boys bill announced = $\frac{114.40}{16}$ = $\frac{11440}{16 \, x \, 100}$ = 7. 15

Contributed who pays for himself and 5 others (16 – 5 = 11 boys) = 11 x 7. 15

= Rs. 42.90

(10) In 16 days to dig a pond labour required 50

Therefore, In 1 day to dig a pond labor required 50 x 16

In 20 days to dig a pond labor required $\frac{50 \, x \, 16}{20}$ = 40 laborors

But, here it is said the another pond in double in size, so laborers required = 40 x 2 = 80 laborors.

(11) 12 men

= 18 women

∴ 4 m = (18/12) × 4

= 6 women

Total women in second case = 4 men + 8 women

6 + 8 = 14 women

18 women can do a piece of work in 7 days

Let 14 women will do the same work in x days

∴ 18 : 14 :: 7 : x

(less women, more days)

⇒ 18 : 14 :: x : 7

(Using inverse proportion)

X = (18 × 7)/14

= 9

∴ They will complete the work in 9 days

(12) See, 3 men or 6 boys = 20 days

⇒ 3m or 6b = 20

or, 3m = 6b

4m + 12b =?

now,

from , M×D = M'× D'

⇒6b ×20 = (4m +12b)×D'

⇒6b ×20 =(8b +12b)×D'

∵ (m =2b)

∴120b = 20b × D'

⇒D' =6 days

They will take 6 days to complete the same work.

(13) Given,

6men + 6 women = 24 days

$\Rightarrow$ 6M + 6W = 24

and, 8M + 12W =15

1)Applying, M×D = M'×D'

(6M + 6W)×24= (8M + 12W)×15

$\Rightarrow$(M + W) ×6×24 = (2M +3W) ×4×15

$\Rightarrow$(M+ W)12 = (2M +3W)5

$\Rightarrow$12M + 12W = 10M +15W

$\Rightarrow$2M = 3 W

hence, 2 men is equal to 3 women

2)now, 4M +6 W = ??

Applying M×D =M'×D'

(6M + 6W)×24 = (4M +6W) ×D'

$\Rightarrow$(9W + 6W) ×24 = (6W +6W)×D'   ∵2M = 3 W

$\Rightarrow$15W ×24 = 12W ×D'

$\Rightarrow$D' = 30 days

It will takes 30 days to complete the same work by 4 men and 6 women

(14) 5(12M+ 16B) = 4(13M + 24B) since the same work is done they will be equal

60M + 80B = 52M + 96B

8M = 16B or M = 2B substitute 2B = M and you will get the total man-days required to do the job and it is

5 (12M + 8M) = 100 man-days

so,

x (7M+10B) = 100M

x (7M+5M)=100M

x =25/3 days so 7 men and 10 boys will have to work for 25/3 days to complete the job.