1. A does 4/5 th of work in 3/5 of time as compared to B. Together they finish the work in 12 days. In how many days A alone will complete the work?

Solution:

If A does 4/5 of the work in 3/5 of the time as compared to B, then A does the work in 3/5 of the time that B does. Let B do the work in x days. Then A does the work in 3x/5 days.

Together, A and B can do the work in 12 days. This means that in one day, A and B can do 1/12 of the work. In one day, A can do 1/(3x/5) of the work, and in one day, B can do 1/x of the work. So,

1/(3x/5) + 1/x = 1/12

5/(3x) + 5/x = 5/12

5/x (1/3 + 1) = 5/12

5/x (4/3) = 5/12

x = 4/3 * 12 = 16

So, B can do the work in 16 days. This means that A can do the work in 3x/5 = 3 * 16/5 = 48/5 = 9.6 days.

2. 1 men , 3 women and 4 children finish work in 96 hour while 2 men and 8 children finish the work in 80 hours, and 2 men and 3 women finish the same work in 120 hours. Find the time in which the work can be completed by 10 men and 5 women?

Solution:
1 man, 3 women and 4 children finish work in 96 hour while 2 men and 8 children finish the work in 80 hours, and 2 men and 3 women finish the same work in 120 hours. Find the time in which the work can be completed by 10 men and 5 women?

Let 1 man 1 day work = m, 1 woman 1 day work = w and 1 child 1 day work = c.

Then, 1m + 3w + 4c = 1/96 --- (1)
2m + 8c = 1/80 --- (2)
2m + 3w = 1/120 --- (3)
Solving (1) and (2), we get m = 1/192, c = 1/384.
Solving (2) and (3), we get w = 1/576.
10 men and 5 women 1 day work = 10/192 + 5/576 = 25/192 = 1/7.68
Therefore, 10 men and 5 women can complete the work in 7.68 days.

3. The sales of a cinema ticket increase by 57 1/7 %, and the price of tickets also increases by 16 2/3%. Find the percentage increase in the revenue collection?

Solution:
Let the original sales of tickets be 100.
Then, the new sales of tickets = 100 + 57 1/7 % of 100 = 157 1/7
Let the original price of a ticket be $1.
Then, the new price of a ticket = $1 + 16 2/3 % of $1 = $1.16 2/3
Therefore, the original revenue collection = 100 * 1 = 100
The new revenue collection = 157 1/7 * 1.16 2/3 = 183 11/21

Therefore, the percentage increase in the revenue collection = (183 11/21 - 100)/100 * 100 = 83 11/21 %.

4. In a garrison, there was sufficient food for 1600 soldiers for 60 days. Each soldier consumes 900 grams of food every day. After 40 days, 400 soldiers left the camp. How long the food will last for the remaining soldiers if they consume 1000 grams of food every day.

Solution:
The total amount of food in the garrison is 1600 soldiers * 60 days * 900 grams/day = 8640000 grams.

After 40 days, the remaining food is 8640000 grams - 40 days * 1600 soldiers * 900 grams/day = 4320000 grams.

There are now 1600 soldiers - 400 soldiers = 1200 soldiers.

If the remaining soldiers consume 1000 grams of food every day, the food will last for 4320000 grams / 1200 soldiers * 1000 grams/day = 43.2 days.
So the answer is 43.2

5. A dealer sold a bicycle at a profit of 10%. Had he bought the bicycle at 10% less price and sold it at a price Rs. 60 more, he would have gained 25%. The cost price of the

Solution:
Let the cost price of the bicycle be Rs. x.
The dealer sold the bicycle at a profit of 10%, so the selling price was Rs. 1.1x.
If he had bought the bicycle at 10% less price, the cost price would have been Rs. 0.9x.
He would have gained 25% if he had sold the bicycle at Rs. 0.9x + 60.
So, the selling price would have been 1.25 * 0.9x = 1.125x.
We know that 1.1x = 1.125x + 60.

So, 0.025x = 60.

Therefore, x = 2400.
Therefore, the cost price of the bicycle is Rs. 2400.
So the answer is 2400