thu
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HOME ASSIGNMENT

1. Ramdin can reap a field in 30 days. What part of the field would he have reaped in 25 days?

Given,

No. of days to reap a field = 30 days

Work done by Ramdin in 1 day = $\frac{1}{30}$

Work done in 25 days = $\frac{1}{30} \times 25$

$= \frac{5}{6}$

~~∴ Hence, 5/6 part of the field.~~

∴ Hence, he would have reaped 5/6 part of the field in 25 days.

2. A farmer can reap a field in 10 days while his wife can do it in 8 days (she does not waste time in smoking). If they work together, in how much time can they reap the field?

Given,

No. of days taken by a farmer to reap = 10 days

No. of days taken by his wife to reap = 8 days.

Amount of work done by the farmer in 1 day = $\frac{1}{10}$

Amount of work done by his wife in 1 day = $\frac{1}{8}$

Amount of work done by both of them in 1 day =

$\frac{1}{10} + \frac{1}{8} = \frac{9}{40}$

No. of days taken to complete the work by them

$= \frac{40}{9}$ days

$= 4\frac{4}{9}$ days

∴ Hence, they can reap the field in $4\frac{4}{9}$ days, if they work together.

3. A can do a job in 10 days while B can do it in 15 days. If they work together and earn ₹3,500, how should they share the money?

Given,

No. of days taken by A = 10 days

No. of days taken by B = 15 days

Amount earned by them = ₹3,500

Amount of work done by A in 1 day = $\frac{1}{10}$

Amount of work done by B in 1 day = $\frac{1}{15}$

Amount of work done by both of them in together in 1 day = $\frac{1}{10} + \frac{1}{15}$

$= \frac{5}{30} = \frac{1}{6}$

For $\frac{1}{6}$ work, they earn = ₹3,500

For 1 work, they earn = ₹(6 × 3500)

= ₹21,000

Sharing,

For $\frac{1}{10}$ work, A earns = ₹21000 × $\frac{1}{10}$

= ₹2,100

For $\frac{1}{15}$ work, B earns = ₹1000 × $\frac{1}{15}$

= ₹1,400

∴ Hence, they should share the money by dividing it into ₹2,100 and ₹1,400.

4. A and B together can paint a room in 2 days. A alone can do it in 3 days. How many days would B require working alone to paint the room?

Given,

No. of days taken when worked together = 2 days

No. of days taken by A = 3 days

Amount of work done by A & B together in 1 day = $\frac{1}{2}$

Amount of work done by A & B in 1 day = $\frac{1}{3}$

Amount of work done by B in 1 day = $\frac{1}{2} - \frac{1}{3} = \frac{1}{6}$

No. of days taken by B = 6 days

∴ Hence, B would require 6 days working alone to paint the room.

5. A can do $\frac{1}{5}$th of a certain work in 2 days and B can do $\frac{2}{3}$rd of it in 8 days. In how much time can they together complete the work?

Given,

No. of days taken by A to complete 1/5 th of a work = 2 days

No. of days taken by B to complete 2/3rd of the work = 8 days

~~Amount of work done by A in 1 day = $\frac{2 \times 1}{5} = \frac{10}{5}$~~

No. of days taken by A to complete 1 the work = $2 \times 5 = 10$ days

Amount of work done by A in 1 day = $\frac{1}{10}$

~~Amount of work done by B in 1 day = $8 \times \frac{3}{2} = \frac{8 \times 3}{2} = \frac{24}{2}$~~

No. of days taken by B to complete the work = $8 \times \frac{3}{2} = 12$ days.

Amount of work done by B in 1 day = $\frac{1}{12}$

Amount of work done by both of them in 1 day = together = $\frac{1}{10} + \frac{1}{12}$

$= \frac{11}{60}$

No. of days taken by both of them = $\frac{60}{11}$ days

$= 5\frac{5}{11}$ days.

∴ Hence, they can together complete the work in $5\frac{5}{11}$ days.

6. One tap fills a tank in 20 minutes and another tap fills it in 12 minutes. The tank being empty and if both taps are opened together, in how many minutes the tank will be full?

Given,

Amount of time taken by one tap = 20 minutes

Amount of time taken by another tap = 12 minutes

Amount of work done by first tap in 1 minute $= \frac{1}{20}$

Amount of work done by second tap in 1 minute $= \frac{1}{12}$

Amount of work done by both of them in together in 1 minute $= \frac{1}{20} + \frac{1}{12}$

$= \frac{2}{15}$

Amount of time taken by both of them $= \frac{15}{2}$ mins

$= 7\frac{1}{2}$ mins

∴ Hence, the tank will be full in $7\frac{1}{2}$ minutes

7. A can do a work in 6 days and B can do it in 8 days. They worked together for 2 days and then B left the work. How many days will A require to finish the work.

Given,

No. of days taken by A = 6 days

No. of days taken by B = 8 days

Amount of work done by A in 1 day $= \frac{1}{6}$

Amount of work done by B in 1 day $= \frac{1}{8}$

Amount of work done by both of them in together in 1 day $= \frac{1}{6} + \frac{1}{8} = \frac{7}{24}$

Amount of work done by both of them in together in 2 days $= 2 \times \frac{7}{24} = \frac{7}{12}$

Amount of work left $= 1 - \frac{7}{12} = \frac{5}{12}$

∴ No. of days taken by A to complete the work $= \frac{5}{12} \div \frac{1}{6}$

$= \frac{5}{2}$ days $= 2\frac{1}{2}$ days.

∴ Hence, A will require $2\frac{1}{2}$ days to finish the work.

8. A can do a piece of work in 40 days. He works at it for 8 days and then B finishes the remaining work in 16 days. How long will they take to complete the work if they do it together?