# Time and Work.

1) A can work 5 times faster than B and takes 60 days less than B to complete the work. In how many days does A and B individually can complete the work?

| B | A |
|---|---|
| n | (n-60) |

$$\frac{n}{5} = 5A$$

$$\frac{n}{5} = n - 60.$$

$$4n = 300.$$

$$n = 75 \text{ days.}$$

$$\frac{75}{5} = 15 \text{ days.}$$

$$= 75 - 60$$

$$= 15 \text{ days.}$$

2) 24 men can finish a work in 10 days. Find the no. of days required to complete the same work by 30 men

24m → 1 day
1/10 work

30m → ?

$$24 \times ? = 30 \times \frac{1}{10}$$

$$? = \frac{30 \times 1 \times 1}{10 \times 24}$$

$$? = \frac{1}{8}$$

$$= 8 \text{ days.}$$

3) A can do a work in 3days. B can do the same work in 6days and C can do the same work in 7days. work together how many days will they take to complete the work?

3 7 8
3 (3, 6, 7
2 (1, 2, 7
7

A → 3days → 1/3
B → 6 → 1/6
C → 7 → 1/7

$= \frac{1}{3} + \frac{1}{6} + \frac{1}{7}$

$= \frac{14+7+6}{42}$

$= \frac{27}{42}\ 9 = \frac{9}{14}$ (1day)

$= \frac{14}{9}$ (Total days)

4) P and Q in 12days, Q and R in 16days, R and P in 24 days. P and Q and R = ?

P+Q = 1/12
Q+R = 1/16
R+P = 1/24.

$P+Q+Q+R+R+P = \frac{1}{12} + \frac{1}{16} + \frac{1}{24}$.

$2(P+Q+R) = \frac{4+3+2}{48}$

$= \frac{9}{48}\ 3$
$\quad 16.$

P+Q+R. = 3/32 (1day)

= 32/3 (days)

total

5) P in 25days. Q is 25% more efficient than P. Q will complete the work in ___ days?

P → 1/25 (1day)

Q = 25% more = 125%.

$\frac{125}{100} \times \frac{1}{30} = \frac{1}{20}$ (1day)

4, 6

24. total = 24 days.

6) 3men can do in 2 days and 4 boys in 6 days. 8men and 8boys = ?

3men 2days
4boys 6days → 3times.

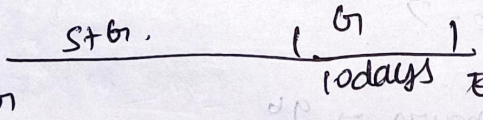
3m = 3(4b)
m = 4b.

8m + 8b = 4 × 8b + 8b.
= 32b + 8b
= 40b.

4b → 6days → 1/6

40b →
4b → 1/6
40b → ?
? = 10/6 (1day)
6/10 (total days)

7) Sita and Geta can do a same work in 20days and 25days. Both begin together but after few days Sita leaves. Then Gita finishes the work in remaining 10days. how many days Sita leave




S 20days 1/20
G 25d 1/25.

S+G = 1/20 + 1/25
= 9/20 × 25
= 4.

10days = 10 × 1/25
= 2/5.

Total = 1 − 2/5
= 3/5.

$n$ days $+ \frac{9}{100} = \frac{9n}{100}$

↓ Sita leaves

$$\frac{9n}{100} = \frac{3}{5}$$

$$n = 20/3 \text{ days.}$$

8) P alone can do a work in 25 days more than P and Q together. Q alone takes 9 days more than P and Q. P and Q = ?

| P+Q | Q | P |
|---|---|---|
| N. | N+9 | N+25 |

$$N = \sqrt{\text{Extra P} \times \text{Extra Q}}$$

$$= \sqrt{25 \times 9}$$

$$= 15 \text{ days.}$$

9) A work 12 days. B in 8 days. A work 8 shours a day. B works 10 hours. A and B works 8 hours work complete = ?

A 12 days 8 hours ⇒ 96

B 8 days 10 hours ⇒ 80.

$$A+B = \frac{1}{96} + \frac{1}{80}$$

$$= \frac{80+96}{80 \times 96}$$

$$= \frac{176}{80 \times 96}$$

$$8 \text{ hours } (A+B) = \frac{\frac{80 \times 96}{176}}{8}$$

$$= \frac{80 \times 96}{176 \times 8}$$

$$= \frac{60}{11} \text{ days.}$$

10) Raj in 16 days. Swati in 12days. Raj and Swati in alternatin days. when the work will be done?

R → 16 days → 1/16

S → 12 days → 1/12

work done cannot be >1

2 days = $\frac{1}{16} + \frac{1}{12}$

$= \frac{16+12}{16 \times 12}$

$= \frac{28}{16 \times 12}$

$= \frac{7}{48}$.

7 days = $\frac{7 \times 7}{48}$

$= \frac{49}{48} > 1$

(not possible)

6 days = $\frac{6 \times 7}{48}$

$= 42/48$

$= 7/8$.

$1 - \frac{7}{8} = 1/8$.

(remaining)

13th day raj $\frac{1}{8} > \frac{1}{16}$.

$\frac{1}{8} - \frac{1}{16} = \frac{1}{16}$

13 3/4 days.

14th day $\frac{1}{12} > \frac{1}{16}$.

$\frac{1}{16} x = x \times \frac{1}{1 \times 3}$

4.

$x = 3/4$