TIME AND WORK

LCM

2, 4, 8, 16 — 16

2, 3, 7, 21 x2 ✓2

3, 9, 21 ~~x2 = 42~~ x3 = 63 ✓

10, 20, 30 x2 = 60 ✓

8, 20, 36 x2 = 72 ✓

2 x 2 x 2 x 2 = 16 - LCM ✓

2	2, 4, 8, 16
2	1, 2, 4, 8
2	1, 1, 2, 4
2	1, 1, 1, 2
	1, 1, 1, 1

36.60 — $6(6,10) = 360$ —

$2+4$

$2(1+2)$

72,240

72,240 × — $24(3,10) = 720$ —

Total work = Time × Efficiency

$W = T \times E$

$10 = 5 \times 2$

$T = \frac{W}{E}$

$E = \frac{W}{T}$

$T_1 \quad T_2$

$4 : 3$

$T \propto \frac{1}{E}$

$E_1 \quad E_2$

$3 : 4$

$E \propto \frac{1}{T}$

A and B can do a piece of work alone in 15 and 30 days respectively. In how many days can they together complete the work?

1. 10 ✓
2. 8 ✗
3. 9 ✗
4. 12 ✗

E 2 A 15 ? W 30

W = T × E

E = W/T

E_A = 30/15 = 2

1 B / 3

A+B = 3

15, (30)

T = W/E = 30/3 = 10

Total work = LCM of Time

A and B together can complete some work in 36 days, B and C together can complete the same work in 60 days, A and C together can complete the same work in 45 days. In how many days, B alone can complete the same work?

1. 180 days
2. 60 days
3. 100 days
4. 90 days

E T W
10 A+B 36
6 B+C 60 360/4 = 90
8 C+A 45

2(A+B+C) = 24

A+B+C = 12 - 8

B = 4

Vijay alone can complete a work in 50 days. How much part of the work will be completed in ten days?

1. $\frac{1}{5}$
2. $\frac{1}{3}$
3. $\frac{1}{10}$
4. $\frac{1}{4}$

N and K together can complete a work in 240 days, K and G together can complete the same work in 72 days and N and G together can complete the same work in 80 days. In how many days K alone can complete the same work?

1. 280 days
2. 240 days
3. 360 days
4. 180 days

72 80 240

72, 240 = 240(3, 10) = 720

Updated till

A can do a piece of work alone in 8 days. B can do the same work alone in 21 days. If they work together for 3 days, then how much work is completed?

1. $\frac{29}{67}$
2. $\frac{31}{65}$
3. $\frac{27}{64}$
4. $\frac{29}{56}$

C T W
21 A 8
168

8 B 21
———
29 ×3

= $\frac{29 \times 8}{168} = \frac{29}{56}$
56

8 × 21 = 168

C and D together can make a chair in 4 days and C alone can make this chair in 12 days. In how many days D alone can make this chair?

1. 10 days
2. 6 days
3. 4 days
4. 8 days

A is 1.5 times as efficient as B. A & B together complete the work in 12 days. In how many days, A alone can complete the work?

1. 20 days
2. 26 days
3. 24 days
4. 27 days

$A = 1.5B$

$A = \frac{3}{2}B$

$A : B = 3/2$

$\frac{1}{12}$

$1.5 = 3/2$

$W = T \times E$

$W = 12 \times 5$

$W = 60$

$(A+B)_E = 5$

$\frac{60}{3} = 20$

A, B and C, working alone can do a piece of work in 15, 30 and 75 days respectively. They work together and get ₹1615 for completing the work. What is the difference in shares of A and C?

1. ₹760
2. ₹620
3. ₹680
4. ₹540

E T W

10 A 15

5 B 30 150

2 C 75

15, 30, 75

150

17 = 1615

1 = 1615/17

8 = 1615/17 × 95

= 95 × 8

95

1615

1615/17

85

800

80/20

Piyush alone can complete a work in 8 days and Arun alone can complete the same work in 14 days. If they both get ₹44000 to complete the work, then what is the share of Piyush?

1. ₹24000
2. ₹16000
3. ₹28000
4. ₹21000

A can do a piece of work alone in 10 days, whereas B alone can do it in 15 days. They work together and get ₹2000 for their work. What is the share of B?

1. ₹1200
2. ₹800
3. ₹1000
4. ₹1600

C T W

3 A 10

2 B 15

10 15 x2

30

30

5 = 2000

1 = 400

2 = 800

A can do a work in 15 days. B is 25% more efficient than A. In how many days, working together A and B will complete the same work?

✗ 1. $\frac{21}{4}$

✗ 2. $\frac{24}{5}$

✓ 3. $\frac{20}{3}$

✗ 4. $\frac{25}{7}$

Vishal alone can complete $\frac{1}{3}$ part of a work in 60 days and Ashok alone can complete $\frac{1}{4}$ part of the same work 30 days. In how many days Vishal and Ashok together can complete the same work?

1. 64
2. 20
3. 72 ✓
4. 56

V 1/3 = 60

1 = 60×3

= 180

A 1/4 = 30

1 = 120

180 120 12 360

T W

180 V

120 A

360

3

5 7?

T = 360/8

A can do 50% of the job in 16 days, B can do one-fourth of the same job in 24 days. Working together, in how many days they can do seven-fourth of the job?

1. 24
2. 28
3. 27
4. 42

A 1/2 16
1 32
B 1/4 = 24
1 = 24 × 4
= 96

T = W/E
= 96 × 7/4
= 96/4 = 42

Ravika alone can complete three-fifth of a work in 105 days. Mallika can complete one-third of work in 50 days. In how many days Ravika and Mallika working together, can complete $\frac{26}{35}$ of the work?

1. 63 days
2. 70 days
3. 60 days
4. 80 days

A can complete $\frac{3}{5}$ work in 12 days, B work $33\frac{1}{3}\%$ work in 10 days and C can complete $\frac{1}{4}$ work in 3 days ~~days~~. In how many days all three can do the work.

(a) 6 days
(b) 10 days
(c) 12 days
(d) $7\frac{1}{2}$ days

C T W
3 A 20
2 B 30
12

$\frac{60}{10} = 6$

$\frac{5}{10}$ C

(1)

(2)

B 1/3 10
30
C 1/6 3

A 3/5 12
1 = 12 × 5/3
= 20

$33\frac{1}{3}\% = \frac{100}{3}\%$
$\frac{(3\times33)+1}{3} = \frac{100}{3\times100}$
$99+1 : \frac{100}{3} = \frac{1}{3}$

A+B

x

A

x+a

B

x+b

$x = \sqrt{ab}$

Anoop takes 5 hours more than Mayank to build a wall. However, Anoop takes 9 hours more than Manoj. Anoop and Mayank together can do the same work in the same time as Manoj. How many hours will Anoop take to do it?

(a) 12 hr
(b) 15 hr
(c) 10 hr
(d) 6 hr

A My Mn

x+9 x+4 x

A + My = Mn

$x = \sqrt{9 \times 4}$

$x = 3 \times 2 = 6$

$x + 9 : 6 + 9 : 15$

$\frac{1}{x} + \frac{1}{x+10} = \frac{1}{6}$

$x = \sqrt{6}$

A takes 4.5 days more than (A + B) together to complete a work. B takes 8 days more than (A + B) together to complete a work. In how many days will (A + B) complete this work ?

A+B	A	B
x	x+4.5	x+8

$$x = \sqrt{ab}$$

$$x = \sqrt{4.5 \times 8}$$

$$= \sqrt{\frac{45}{10} \times 8 \times 4}$$

$$= \sqrt{9 \times 4} = 3 \times 2 = 6$$

A takes 5 days more than B and 9 days more than C to complete a work. C works as much as (A + B) works together. In how many days will B and C to-gether complete this work ?

A+B

A B C

x+9 x+4 x

15 10 6

A 4 15

B 6 10

C 10 6

A+B : C

$x = \sqrt{6 \times 4} = 3 \times 2 = 6$

60/16 15 15/4

A can complete one-third of a work in 5 days and B can do $\frac{2}{5}$th of the same work in 10 days. They work together for 6 days. The remaining work is completed by C in 18 days. C alone will do the same work in:

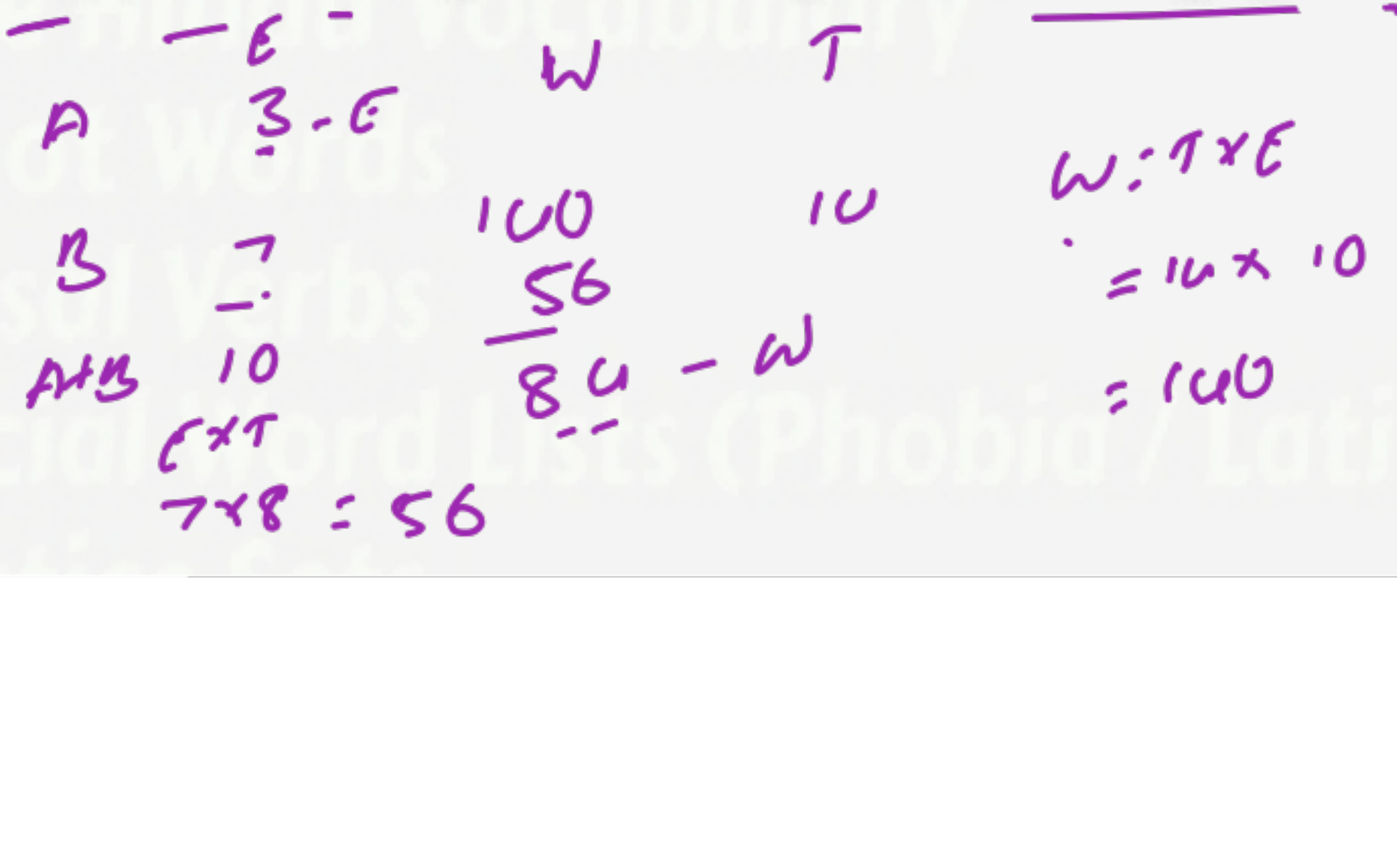
1. 50 days
2. 30 days
3. 25 days
4. 45 days

Two teachers A and B can complete an academic work in 10 days and 15 days respectively. They started the work together, but A left after 5 days and another teacher C joined, who alone can complete the work in 60 days. In how many days the work got completed?

1. 7 ✔
2. 5 ✘
3. 6 ✘
4. 2x ✘

To do a certain work, the ratio of efficiencies of A and B is 3 : 7, working together, they can complete a work in 14 days. B started the work and after working for 8 days, he left and A completed the remaining work. For how many days did A work?

1. 28 ✓
2. 30 ✗
3. 24 ✗
4. 27 ✗

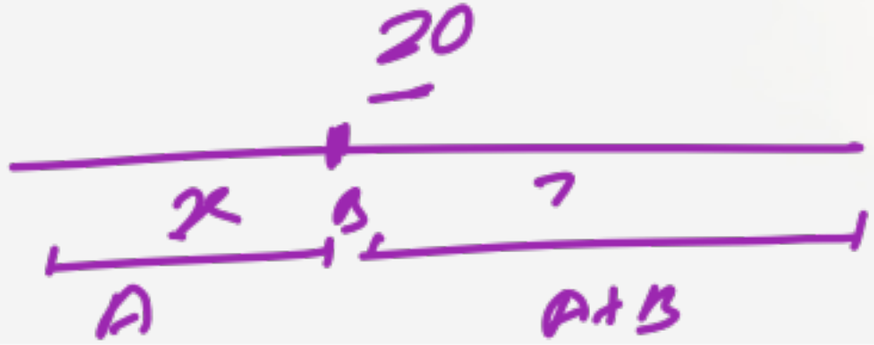


X did a task for 24 days and left it incomplete. He could have finished the task all by himself in a total of 36 days. Y, who can finish the task alone in 18 days, will take how many more days to complete the task?

1. 9
2. 6
3. 12
4. 8

A and B can complete a certain work in 24 days and 42 days, respectively. A started the work and after x days, B joined him and the whole work was completed in 20 days. The value of x is:

1. 11
2. 13
3. 7
4. 9



T W

7 A 24

168

4 B 42 140

28

A: 20 days

24 42 84

7 × 20 = 140

T: W 28 = 7
6 4

20 - 7 = 13

24, 42 = 6(4, 7)

2 8 6

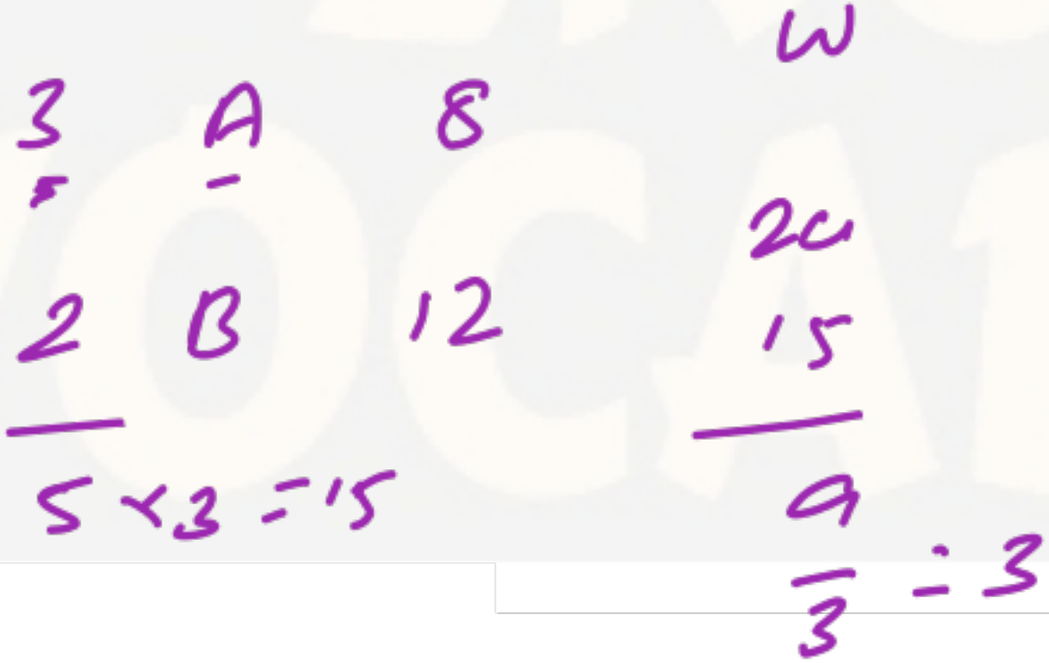
= 168

A can do a piece of work in 15 days and B can do it in $22\frac{1}{2}$ days. They worked together for 6 days and the remaining work was completed by C alone in 6 days. A, B and C together will do the same work in:

1. 8 days
2. 10 days
3. 6 days
4. 12 days

An experienced carpenter can complete a woodwork in 8 days. A young carpenter can complete the same work in 12 days. Both work together for 3 days, and then the latter leaves. How many days will be taken by the former to complete the remaining work?

1. 3 ✓
2. 4 ✗
3. 2 ✗
4. 6 ✗



A man can finish a piece of work in 15 days. A woman can complete the same work in 10 days. Both work together for 5 days, then the man leaves. How many days will be taken by the woman to finish the remaining work?

1. $2\frac{1}{2}$

2. $1\frac{1}{3}$

3. $2\frac{2}{3}$

4. $1\frac{2}{3}$ ✓

2 M 15 30

3 W 10 25

5 × 5 = 25

5

8/3 $1\frac{2}{3}$

8/3 $1\frac{2}{3}$

Samrat alone can complete a work in 10 days and Virat alone can complete the same work in 40 days. If they are working on alternate days with Samrat starting the work, then in how many days will the total work be completed?

1. 14 days
2. 16 days
3. 8 days
4. 12 days

E

4 5 10

1 V 40

W

40

1 2 3 4

S V S V

4 + 1

5 5

8 × 2 days = 5 work × 8

(4 2)

16 days = 40 work

A contractor takes a contract to complete a road in 60 days and employed 105 labours. After 25 days, he found that one-third work is completed. How many more labours he requires to complete the remaining work in time?

1. 45 ✓
2. 150 ✗
3. 75 ✗
4. 105 ✗

1/3. 105 25 1/3 1

(105+x) 35 2/3 2

$\frac{M_1 D_1 A_1}{W_1} = \frac{M_2 D_2 A_2}{W_2}$

$\frac{105 \times 25}{1/3} = \frac{(105+x) \times 35}{2/3}$

$105 + x = 150$

$x = 150 - 105$

$x = 45$

$105 + x = 75 \times 2$

A contractor takes a contract to complete a road in 60 days and employed 70 labours. After 25 days, he found that one fourth work is completed. How many more labours he requires to complete the remaining work in time?

1. 90
2. 82
3. 80 ✓
4. 85

1/4. 70 25 1/4

$\frac{M_1 D_1 W_1}{W_1} : \frac{M_2 D_2 W_2}{W_2}$ (70+x) 35 3/4

$\frac{2 \times 20 \times 25}{1/4} = \frac{(70+x) \times 35}{3/4}$

$70+x = 2 \times 25 \times 3$

$70+x = 150 \Rightarrow x = 150 - 70 = 80$

Some persons can do a piece of work in 84 days. Two times the number of such persons will do half of the same work in how many days?

1. 21 days
2. 14 days
3. 16 days
4. 15 days

x 84 1
2x D_2 1/2

$\frac{M_1 D_1 H_1}{W_1} = \frac{M_2 D_2 H_2}{W_2}$

$\frac{x \times 84}{1} = \frac{2x \times D_2}{1/2}$

$84 = 2 \times D_2 \times x \times 2$

2 1
$D_2 = \frac{84}{4}$
$D_2 = 21$

1/1 1/2
1/1 x 2

Anil can make 20 bags in 4 days and Manoj can make 10 bags in 5 days. How many bags both Anil and Manoj together can make in one day?

M D W

A 4 20

M 5 10

A/M

1. 11 bags
2. 7 bags
3. 9 bags
4. 5 bags

$\frac{M_1 D_1 H_1}{W_1} : \frac{M_2 D_2 H_2}{W_2}$

$\frac{A \times 4}{20 \times 5} = \frac{M \times 5}{10 \times 2}$

A 5

M 2

A + M = 5 + 2 = 7

If Dev can make 40 chairs in 20 days, working 10 hours per day then in how many days can he make 10 chairs working 8 hours per day?

1. 8
2. 6
3. $6\frac{1}{4}$
4. $7\frac{1}{2}$

$$\frac{M_1 D_1 H_1}{W_1} = \frac{M_2 D_2 H_2}{W_2}$$

$$\frac{20 \times 10}{40} = \frac{D_2 \times 8}{10}$$

$$(6 \times 4) + 1 = \frac{25}{4}$$

$D_2 : \frac{25}{4}$ days $\quad 6\frac{1}{4}$

36 men and 48 women can do a certain work in one day whereas 6 men and 12 women can do it in 5 days. The number of women required to do the same work in 8 days is:

1. 10
2. 15
3. 18
4. 12

$(36M + 48W) \times 1 = (6M + 12W) \times 5$

$36M + 48W = 30M + 60W$

$36M - 30M = 60W - 48W$

$6M = 12W$

$M/W = 12/6$

$M/W = 2/1$

$(36 \times 2 + 48 \times 1) 1 = W$

$W = 72 + 48 = 120$

$8W = 8$ 15

$T = 120/8$

Working together, A and B can complete a work in 12 days. They work together for 9 days after which B leaves. If A finishes the remaining work in 5 days, then the number of days that B alone would take to complete the work is:

1. 12
2. 24
3. 30
4. 15

A+B : 12

W : 12 × 1 = 12 work

9 — 9/3

3/5

A+B = 1

B : 2/5

12 × 5/2 = 30

A work can be completed by 35 workers in 30 days. If 5 workers leave after every 10 days then in how many days will the work be completed?

1. 35.5 days
2. 37.5 days
3. 40 days
4. 50 days

Total work = 35 x 30 = 1050

10 x 35 = 350

- 5

10 x 30 = 300

- 5

10 x 25 = 250

900

200

- 7.5

= 37.5

150

20 x x = 150

x = 150/20 = 7.5

8. 40 men can complete a piece of work in 40 days. They started the work together but at the end of each 10th day 5 men left the job. In how many days work would have been completed.

(a) $56\frac{2}{3}$ days (b) $64\frac{2}{3}$ days
(c) $56\frac{1}{3}$ days (d) $48\frac{1}{3}$ days

40×40 = 1600 work
10×40 = 400
10×35 = 350
10×30 = 300
10×25 = 250
1300
10×20 = 200
1500
50 days =

15×x = 100
x = 100/15 = 20/3 = $6\frac{2}{3}$
50 + $6\frac{2}{3}$
$56\frac{2}{3}$