Time and work Questions for CDS, CLAT & SSC Exams.

Time and work Quiz 8

Directions: Study the following Questions carefully and choose the right answer:

1. 30 men can complete a piece of work in 15 days. In how many days will 25 men complete the same piece of work?

A. 12 days B. 18 days C. 22 days D. 24 days

2. 12 boys, working 3 hours a day can complete a work in 20 days. How many hours a day must 18 boys work to complete the same work in 10 days?

A. 4 hrs B. 18 hrs C. 10 hrs D. 12 hrs

3. If 8 boys or 12 girls can do a piece of work in 28 days, then in how many days will 4 boys and 8 girls do the same work?

A. 12 B. 24 C. 28 D. 32

4. 20 labourers, working 7 hours a day can finish a piece of work in 30 days. If the labourers work 5 hours a day, then the number of labourers to finish the same piece of work in 40 days, will be :

A. 15 B. 21 C. 22 D. 25

5. If 25 pumps can raise 2500 tonnes of water in 20 days, working 5 hours a day; in how many days will 20 pumps raise 1200 tonnes of water, working 8 hours a day?

A. 6 days B. $\frac{3}{2}$ days C. $\frac{15}{2}$ days D. $\frac{7}{2}$ days

6. If 8 carpenters, working 5 hours a day, can make 350 chairs in 24 days. How many chairs will 12 carpenters make in 36 days, each working 8 hours a day?

A. 1260 B. 1320 C. 920 D. 1380

7. 30 men can produce 1500 units in 24 days working 6 hours a day. In how many days, can 18 men produce 1800 units working 8 hours a day?

A. 18 days B. 32 days C. 36 days D. 45 days

8. 3 men or 5 women can do a work in 12 days. How long will 6 men and 5 women take to finish the work?

A. 4 days B. 5 days C. 6 days D. 7 days

9. If 9 engines consume 24 metric tons of coal, when each is working 8 hours a day, how much coal will be required for 8 engines, each running 13 hours a day, it being given that 3 engines of former type consume as much as 4 engines of latter type?

A. 23 metric tons B. 24 metric tons C. 25 metric tons D. 26 metric tons

10. 12 men can complete one-third of work in 8 days. In how many days can 16 men complete the rest of the work?

A. 18 B. 12 C. 34 D. Can’t be determined

Correct Answers:

1	2	3	4	5	6	7	8	9	10
B	A	B	B	C	A	C	A	D	B

Explanations:

1. Given:

$M_1 = 30$, $D_1 = 15$, $M_2 = 25$ and

let the required number of days (D_2) be K .

Using the short trick which is $M_1D_1 = M_2D_2$

We get,

$30 \times 15 = 25 \times K$

$\Rightarrow K = \frac{30 \times 15}{25}$

$\Rightarrow K = 18$ days

Hence, option B is correct.

2. Let the required number of hours per day be z. Then,

More boys, Less hours per day (Indirect proportion)

Less days, More hours per day (Indirect proportion)

Boys 18 : 12
Days 10 : 20 } :: 3 : z

$z = \frac{12 \times 20 \times 3}{18 \times 10} = 4$hrs.

Hence, option A is correct.

3. Let required number of days be z. Then,

Since, 8 boys = 12 girls, therefore,

4 boys = $\left[\frac{12}{8} \times 4\right] = 6$ girls.

(4 boys & 8 girls) = (6 girls + 8 boys) = 14 girls

$\Rightarrow$ 14 : 12 :: 28 : z

So, $z = \frac{12 \times 28}{14} = 24$days.

Hence, option B is correct.

4. Let the required number of labourers be z. then,

Less working hrs/ Day, More labourers (Indirect proportion)

More days, Less labourers (Indirect proportion)

$$\left.\begin{matrix}\text{Hours } 5 : 7 \\ \text{Days } 40 : 30\end{matrix}\right\} :: 20 : z$$

$$z = \frac{7 \times 30 \times 20}{5 \times 40} = 21 \text{ labourers.}$$

Hence, option B is correct.

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5. Let required number of days be z. Then,

Less pumps, More days (Indirect proportion)

Less weight, Less days (Direct proportion)

More hours/ day, Less days (Indirect proportion)

$$\left.\begin{matrix}\text{Pumps } 20 : 25 \\ \text{water } 2500 : 1200 \\ \text{Hours } 8 : 5\end{matrix}\right\} :: 20 : z$$

$$z = \frac{25 \times 1200 \times 20 \times 5}{20 \times 2500 \times 8} = \frac{15}{2} \text{ days.}$$

Hence, option C is correct.

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6. Let required number of chairs be z. Then,

More carpenters, More chairs (Direct proportion)

More hours per day, More chairs (Direct proportion)

More days, More chairs (Direct proportion)

$$\left.\begin{matrix}\text{Carpenters } 8 : 12 \\ \text{Hours } 5 : 8 \\ \text{Days } 24 : 36\end{matrix}\right\} :: 350 : z$$

$$z = \frac{12 \times 8 \times 36 \times 350}{8 \times 5 \times 24} = 1260 \text{ chairs.}$$

Hence, option A is correct.

7. To solve this question, we can apply a short trick approach;

If M_1 persons can do W_1 works in D_1 days working T_1 hours a day and M_2 persons can do W_2 works in D_2 days working T_2 hours a day then we have a short-trick formula which is $M_1D_1T_1W_2 = M_2D_2T_2W_1$

Given:

$M_1 = 30$, $D_1 = 24$ days, $W_1 = 1500$ units, $T_1 = 6$ hours a day

$M_2 = 18$, $D_2 = ?$, $W_2 = 1800$ units, $T_1 = 8$ hours a day

By the short trick approach,

$M_1D_1T_1W_2 = M_2D_2T_2W_1$

$\Rightarrow 30 \times 24 \times 6 \times 1800 = 18 \times D_2 \times 8 \times 1500$

$\Rightarrow D_2 = \dfrac{30 \times 24 \times 6 \times 1800}{18 \times 8 \times 1500} \Rightarrow D_2 = 36$ days.

Hence, option C is correct.

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8. 3 men = 5 women

6 men + 5 women = 15 women

$\therefore$ By $M_1D_1 = M_2D_2$

$\Rightarrow 5 \times 12 = 15 \times D_2$

$D_2 = \dfrac{5 \times 12}{15} = 4$ days.

Hence, option A is correct.

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9. To solve this question, we can apply a short trick approach;

If M_1 persons can do W_1 work in H_1 hours and M_2 persons can do W_2 work in H_2 hours , $M_1T_1W_2 = M_2T_2W_1$

Given:

$\because$ 4 engines latter type = 3 engines former type

$\therefore$ 8 engines latter type = 6 engines former type

$M_1 = 9$, $H_1 = 8$ hours/day, $W_1 = 24$ m tons

$M_2 = 8$, $H_2 = 13$ hours/day, $W_2 = x$ m tons

Now, as $M_1H_1W_2 = M_2H_2W_1$

$\Rightarrow 9 \times 8 \times x = 6 \times 13 \times 24$

$\Rightarrow x = \dfrac{6 \times 13 \times 24}{9 \times 8} \Rightarrow x = 26$ m tons.

Hence, option D is correct.

10. To solve this question, we can apply a short trick approach;

If M_1 persons can do W_1 works in D_1 days and M_2 persons can do W_2 works in D_2 days then we have a short-trick formula which is $M_1D_1W_2 = M_2D_2W_1$

Given:

$M_1 = 12$, $D_1 = 8$, $W_1 = \frac{1}{3}$,

$M_2 = 16$, $D_2 = ?$, $W_2 = 1 - \frac{1}{3} = \frac{2}{3}$

Now, as

$M_1D_1W_2 = M_2D_2W_1$

$\Rightarrow 12 \times 8 \times \frac{2}{3} = 16 \times ? \times \frac{1}{3}$

$\Rightarrow ? = \frac{12 \times 8 \times 2 \times 3}{16 \times 3} = 12$ days.

Hence, option B is correct.