⑰ In a test there are 26 Questions. There is -5 for every wrong answer and +8 for every correct answer. If all the ~~answer~~ questions are answered by the student and he scored 0 marks. How many questions were answered correctly.

**Solution**

$$C + W = 26 \implies 5C + 5W = 130 \quad -①$$

$$8C - 5W = 0 \quad -②$$

from ① & ②

$$13C = 130$$

$$\boxed{C = 10}$$

⑱ In how many ways can a team of 11 members be chosen from 5 men and 11 women so that there are no more than 3 men.

**Solution**

$$\begin{pmatrix} 11 \text{ Women} \\ 0 \text{ men} \end{pmatrix} or \begin{pmatrix} 10 \text{ women} \\ 1 \text{ Man} \end{pmatrix} or \begin{pmatrix} 9 \text{ women} \\ 2 \text{ Men} \end{pmatrix} or \begin{pmatrix} 8 \text{ women} \\ 3 \text{ men} \end{pmatrix}$$

$$\implies {}^{11}C_{11} + \left( {}^{11}C_{10} \, {}^{5}C_{1} \right) + \left( {}^{11}C_{9} \, {}^{5}C_{2} \right) + \left( {}^{11}C_{8} \, {}^{5}C_{3} \right)$$

$$\implies (1) + (11 \times 5) + (55 \times 10) + (88 \times 10)$$

$$\implies 1 + 55 + 550 + 880$$

$$\implies \boxed{1486}$$

㉑ $f(x) = ax^4 - bx^2 + x + 5$

$f(-3) = 2$

Find $f(3)$

Solution

$f(-3) = a(-3)^4 - b(-3)^2 + (-3) + 5$

$2 = 81a - 9b - 3 + 5$

$2 = 81a - 9b + 2$

$81a - 9b = 0$

$81a = 9b$

$$\boxed{9a = b}$$

$f(3) = a(3)^4 - b(3)^2 + 3 + 5$
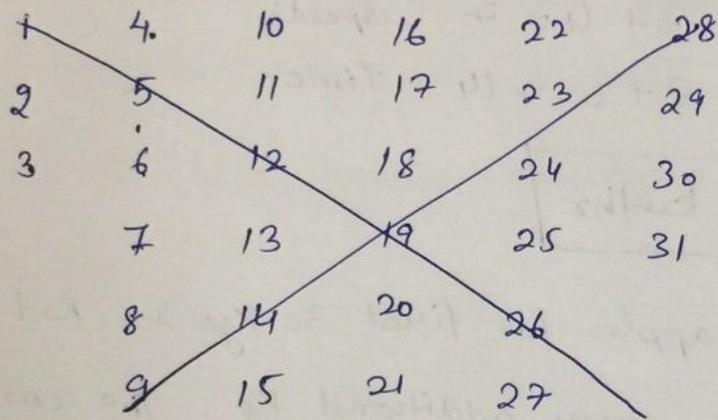
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$$\boxed{f(3) = 8}$$

㉒ The amount mark gets for 10 days is equal to the amount that gowri gets for 15 days. If they both work together, for how many days they can work with the amount

Solution

$$\frac{10 \times 15}{10 + 15} = \frac{150}{25} = \boxed{6 \text{ days}}$$

(16) In a particular year, the month of January had exactly 4 Thursdays and 4 Sundays. What was the day on 1st January that year.

| 1 | 4 | 10 | 16 | 22 | 28 |
|---|---|----|----|----|----|
| 2 | 5 | 11 | 17 | 23 | 29 |
| 3 | 6 | 12 | 18 | 24 | 30 |
|   | 7 | 13 | 19 | 25 | 31 |
|   | 8 | 14 | 20 | 26 |    |
|   | 9 | 15 | 21 | 27 |    |

Solution

| 4 | 11 | 18 | 25 |    | Thursday |
|---|----|----|----|----|----------|
| 5 | 12 | 19 | 26 |    | Friday |
| 6 | 13 | 20 | 27 |    | Saturday |
| 7 | 14 | 21 | 28 |    | Sun |
| 1 | 8 | 15 | 22 | 29 | Monday |
| 2 | 9 | 16 | 23 | 30 | Tuesday |
| 3 | 10 | 17 | 24 | 31 | Wednesday |

1st January ⟹ Monday

Q.19 Every monday 10:00 Am the clock is set by Antony, doing service in the church, the clock loses 8 min. every hour. What will be the actual time when the faulty clock shows 3pm. On friday?

Q.20 A is 20% more efficient than B. If the two person can complete a piece of work in 80 days. In how many days? A working alone can complete the work.

Q.21 When asked what the time is, a person answered that the amount time left is $1/6$ of the time already completed. What is the time?

Q.22 Divide Rs 2379 into 3 parts such that their amounts after 2,3 and 4 year respectively may be equal. The rate of interest being 5% per annum at simple interest. The first part is

Q.23 1040 Litre is divided into two parts in the ratio $x:21$. If the first part is 200 litre. Find x.

Q.24 Two number are in the ratio 7:9. If 12 is subtracted from each of them, the ratio becomes 3:5. What is the product of the numbers?

Q8 George and Mark Can paint 720 boxes in 20 days. Mark and harry in 24 days and harry and George in 15 days. George works for 4 days Marks for 8 days. The total no of boxes painted by them is..

Q9. A number when Successively divided by 5, 3, 2 gives remainder 0, 2, 1 respectively in that order. What will be the remainder when the same number is divided Successively by 2, 3, 5 in that order.

Q10 If $A\wedge B$ means A raised to the power of B, in which of the following choices must P be greater than Q

(i) $0.9\wedge P = 0.9\wedge Q$    (ii) $0.9\wedge P = 0.92\wedge Q$
(iii) $0.9\wedge P > 0.9\wedge Q$   (iv) None

Q11 Total number of 4 digit number do not having the digit 3 or 6.

Q12 There are 6 red balls, 8 blue balls and 7 green balls in a bag. If 5 are drawn with replacement, what is the probability at least 3 are red?

**Q.16** The Value of Gold Varies directly as the Square of its weight. If a ... Gold falls and break into two pieces with weight in the ratio 2:3. What is the loss % in the Value?

**Q.14** What is the 32nd word of "waiting" in a dictionary?

**Q.15** A rectangular park 60m long and 40m wide has two concrete crossroads running in the width of the park and rest of the park has been used as a lawn. If the area of the lawn is 2109 sq.m then what is the width of the road.

**Q.16A** A circular Swimming pool is surrounded by a concrete walk 4 feet wide. If the area of the walk is 11/25 of the area of the pool, then the radius of the pool in feet is?

**Q.17** How many odd and even numbers are there between 40 and 400? find the sum of odd number

**Q.18** There are 4 different letters and 4 addressed envelops. In how many ways can the letters be put in the envelops so that at least one letter goes to the correct address?

## TCS Ques

Q1. A two digit number is 18 less than the square of the Sum of it's digits. How many such numbers are there?

Q2. 5000 voted in an election between two candidates 17% of the votes were invalid. The winner won by a margin approximately closer to 15%. Find the number of votes secured by the person.

Q3. In how many ways a committee of 15 can be formed from 5 men and 11 women such that committee compances of not more than 5 men.

Q4. Esha got 18 Sharpner at Rs 100, she paid one rupee more for white Sharpner than Brown. How many white Sharpner she buys and at what price?

Q5. Two dice are thrown whose sum is 5027. What is the probability that 5 occurs before 7.

Q6. Jack is faster than paul, Jack, Paul paul each walk 24 km/hr. and Sum of their speed 7 km/hr. Sum of their time taken by they is 29 hr. What is √7² m/s speed?

Q7. In a city 60% registered voters are party A supporters 6 out of them are party B supporters. In an assembly election of 75% of party A supporter & 20% party B supporter expected to vote for Land A what % of voters voted for land A.

(5) George, Paul and Harry take 8, 10, 12 days resp. to complete the work. They start together at 9 am and two hours later George leaves them. What is the time taken by Paul and Harry to complete the remaining work.

Solution

$$(\text{George} + \text{Paul} + \text{Harry}) \quad \text{1 HW} \xrightarrow{} \frac{1}{8} + \frac{1}{10} + \frac{1}{12}$$

$$= \frac{15 + 12 + 10}{120} = \frac{37}{120}$$

$$2 \text{HW} \xrightarrow{} 2 \times \frac{37}{120} = \frac{74}{120}$$

$$\text{Remaining work} = 1 - \frac{74}{120} = \frac{46}{120}$$

$$(\text{Paul} + \text{Harry}) \quad \text{1 HW} = \frac{1}{10} + \frac{1}{12} = \frac{10 + 12}{10 \times 12} = \frac{22}{120}$$

for Paul & Harry

| Work | Hours |
|------|-------|
| 1 | $\frac{120}{22}$ |
| $\frac{46}{120}$ | $x$ |

$$x = \frac{46 \times \frac{120}{120}}{22} = \frac{23}{11} \text{ Hours}$$

$$= \boxed{2\frac{1}{11} \text{ Hours}}$$

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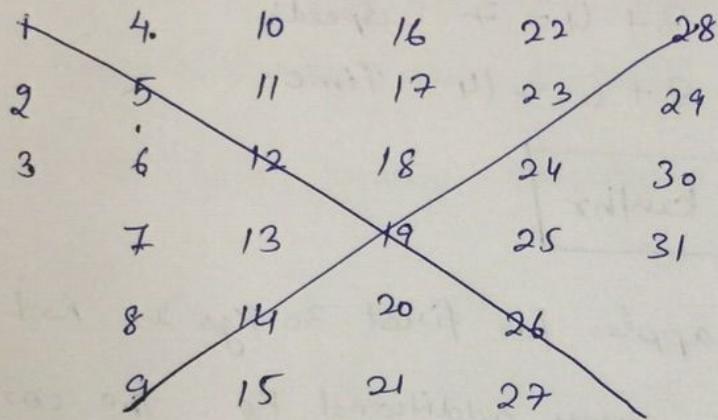
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**Solution**

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1st January ⟹ Monday

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$(\text{Paul} + \text{Harry}) \quad \dfrac{1\,HW}{DW} = \dfrac{1}{10} + \dfrac{1}{12} = \dfrac{10 + 12}{10 \times 12} = \dfrac{22}{120}$

for Paul & Harry

| Work | Hours |
|------|-------|
| 1 | $\dfrac{120}{22}$ |
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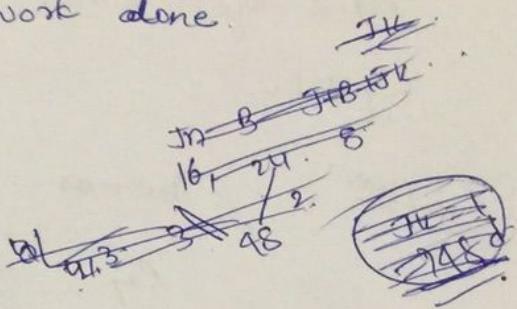$$x = \dfrac{46}{120} \times \dfrac{120}{22} = \dfrac{23}{11} \text{ Hours}$$

$$= \boxed{2\dfrac{1}{11} \text{ Hours}}$$

① John does a work in 16 days, Ben in 24 days. John, Ben and Jack can do the work in 8 days. In how many days does Jack do the work alone.

Solution    John    1DW → $\frac{1}{16}$

Ben    1DW → $\frac{1}{24}$

(John + Ben + Jack) 1DW → $\frac{1}{8}$

Jack 1DW = $\frac{1}{8} - \frac{1}{16} - \frac{1}{24}$

$= \frac{6 - 3 - 2}{48} = \frac{1}{48}$

$$\boxed{\text{Jack} \longrightarrow 48 \text{ days}}$$

② On March 11th, 2003, the day was Tuesday. What was the day on 11th March 2004

Solution    Each year has 365 days

52 weeks    1 day extra

Since 2004 is a leap year.

366 days

52 weeks    2 days extra

So +2 → Tuesdays + 2 → $\boxed{\text{Thursday}}$