

CCT Weekly-MATHEMATICS

Unit I - Finding Fault

A washing machine company makes two types of washing machines: Top-loaded and Front-loaded machines. At the end of the daily production, the washing machines are tested and those with faults are removed and sent for repair.

The following table shows the average number of washing machines of each type that are made per day, and the average percentage of faulty machines per day.

Machine Type	Average number of machines made per day	Average percentage of faulty machines per day
Top loaded machine	1000	2%
Front loaded machine	2000	2.5%

Question 1:-

What is the average number of faulty machines produced by the company in a day?

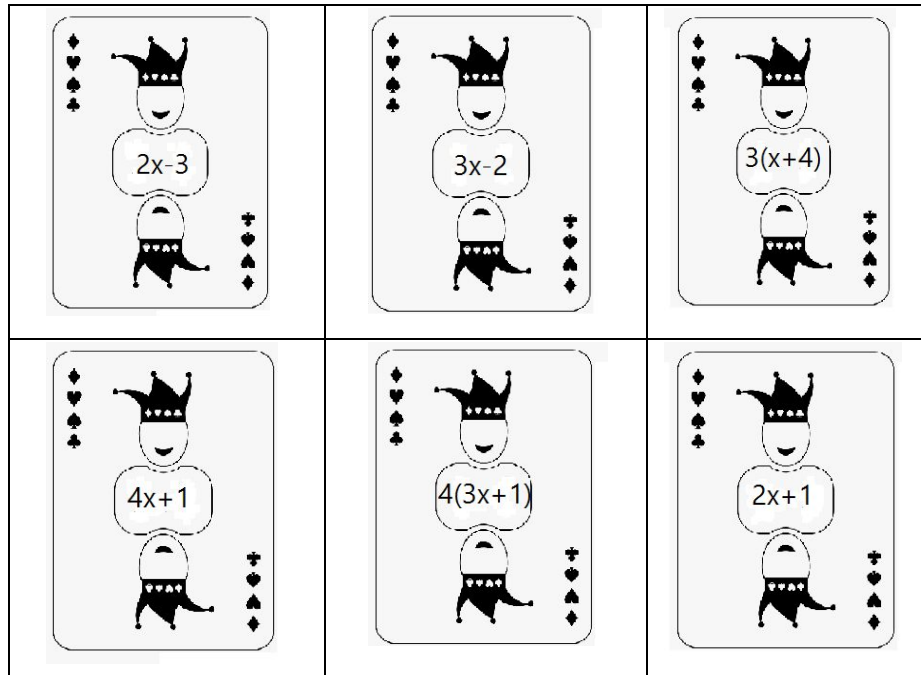
- (a) 60
- (b) 65
- (c) 70
- (d) 75

Question 2:-

Shubhi predicts that if there is a batch of 100 Top loaded machines, exactly 2 will be faulty. Is Shubhi's prediction correct or incorrect?

Unit II- ALGEBRAIC CARDS

Three friends have a set of 6 algebraic cards as shown below. Each card has an algebraic expressions written on it. Here, x is a positive integer.



Rohan picks a card whose value is always even. Meera picks a card which is always a multiple of 3. Sid picks a card which is a factor of $4x^2 - 1$.

Question 3:

How many cards are picked by Rohan?

Question 4:

How many cards are picked by Meera?

Question 5:

How many cards are not picked by any one of the three friends?

Answer Keys

1. (c) 70

Number of faulty Top loaded machines - $\frac{2}{100} \times 1000 = 20$

Number of faulty Front-loaded machines - $\frac{25}{1000} \times 2000 = 50$

Total number of faulty machines = $20 + 50 = 70$

2. (b) No

Shubhi's prediction is incorrect as its not compulsory that in every batch there will be exactly same number of faulty machines.

3. 1 card which is $4(3x + 1)$ as it is a multiple of 2.
4. 1 card which is $3(x + 4)$
5. 3 cards namely $2x - 3$, $3x - 2$ and $4x + 1$.

Created by:-

1. Praveen Ralhan and Seema Sandha.