GATE

ALL BRANCHES

GENERAL APTITUDE

Analytical Aptitude

Lecture No: 06

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TOPICS TO BE COVERED

1. Understanding Venn Diagrams
2. Importance and it’s usage
3. Questionnaire on the Topic

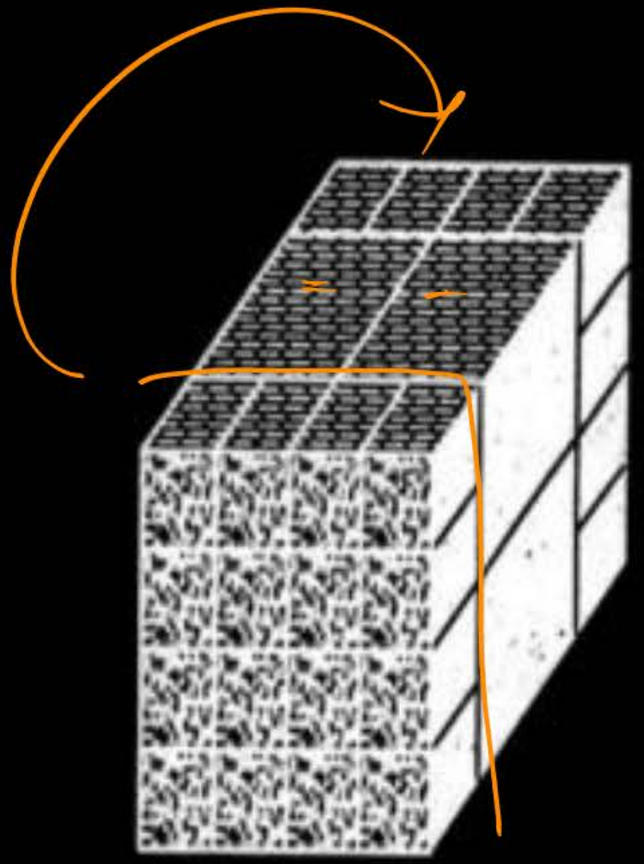
Q. How many cubes have no face painted?

A. 0

B. 8

C. 12

D. 16



Yellow
Blue
Black

Assignment

Q. How many cubes have two faces painted yellow and black respectively?

A. 0

B. 8

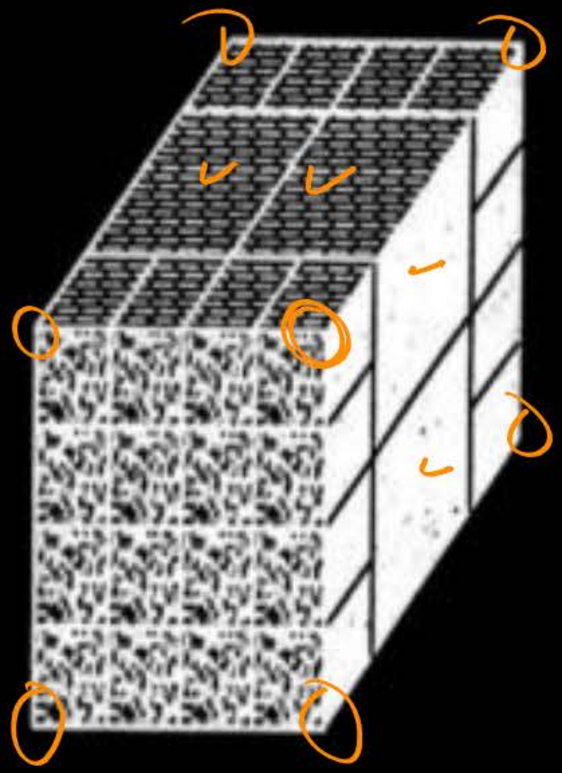
C. 12

D. 16

Big ⇒ 4

Small ⇒ 8

12



Assignment

Q. The six faces of a dice have been marked with alphabets A, B, C, D, E and F respectively. This dice is rolled down three times. The three positions are shown as:

Find the alphabet opposite A ⇔ E

E → C, D, B, F

E ⇔ A

A. C

B. D

C. E

D. F

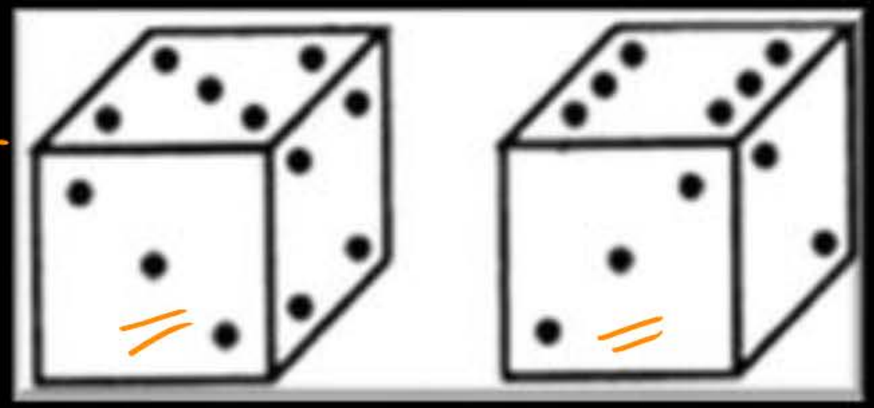
Assignment

Q. Two positions of a dice are shown below. If the face with 1 dot is at the bottom, then the number of dots on the top is

1 ⇒ 3

3 ⇒ 5, 4, 6, 2

3 ⇒ 1



A. 2

B. 3

C. 5

D. 4

Assignment

Q. Two positions of a dice are shown below. If the face with 1 dot is at the bottom, then the number of dots on the top is

A. 2

B. 4

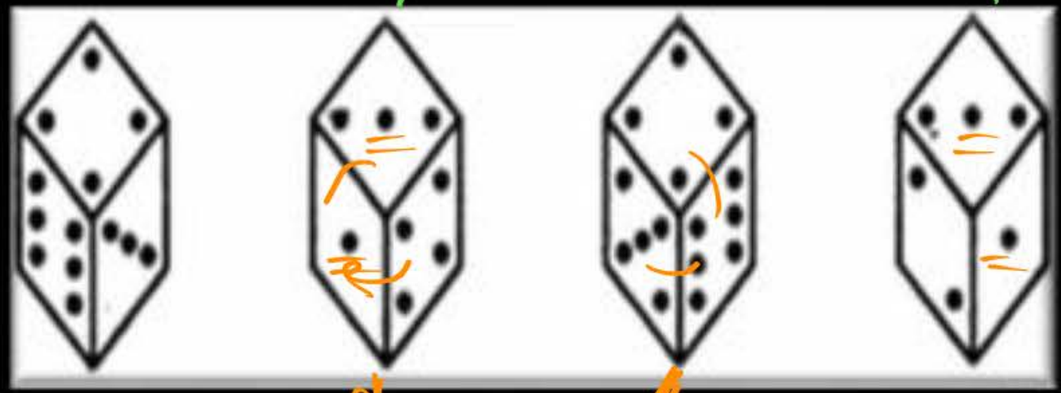
C. 5

D. 6

4 ⇔ 2

4 – 1 – 3

4 – 6 – 5



4 ⇒ 1, 3, 5, 6

4 ⇔ 2

Assignment

Q. A cube has six different symbols drawn over its six faces. The symbols are dot, circle, triangle, square, cross and arrow. Three different positions of the cube are shown in figures X, Y, and Z.
Which symbol is opposite the dot?

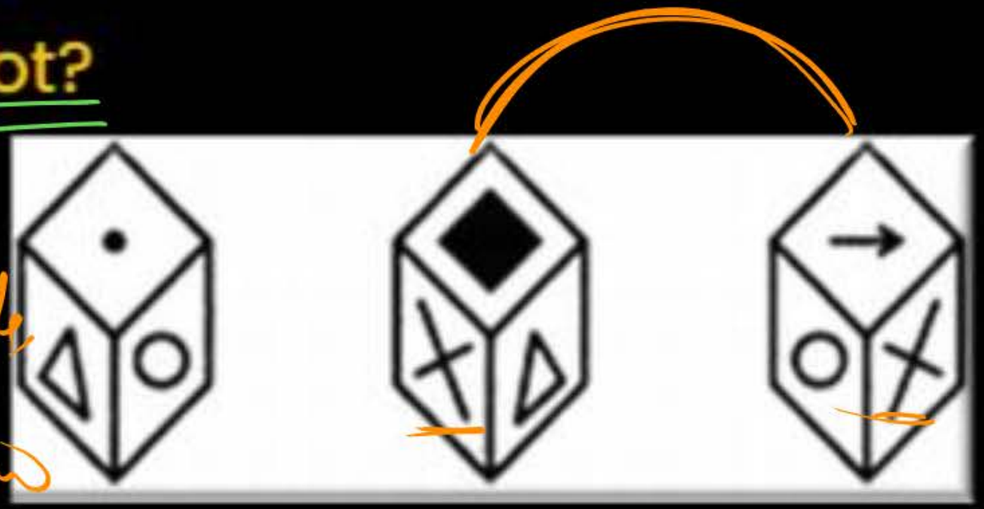
A. Circle

B. Arrow

C. Cross

D. Triangle

X → Square, triangle, Circle, Arrow

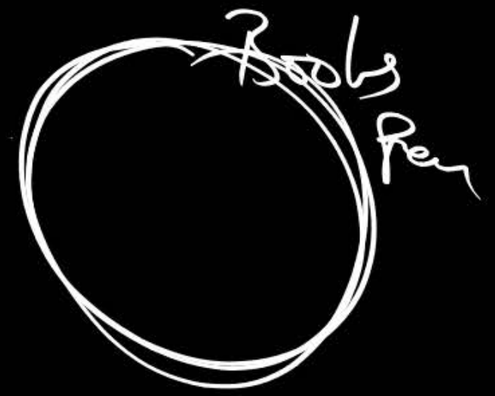


(x) (y) (z)

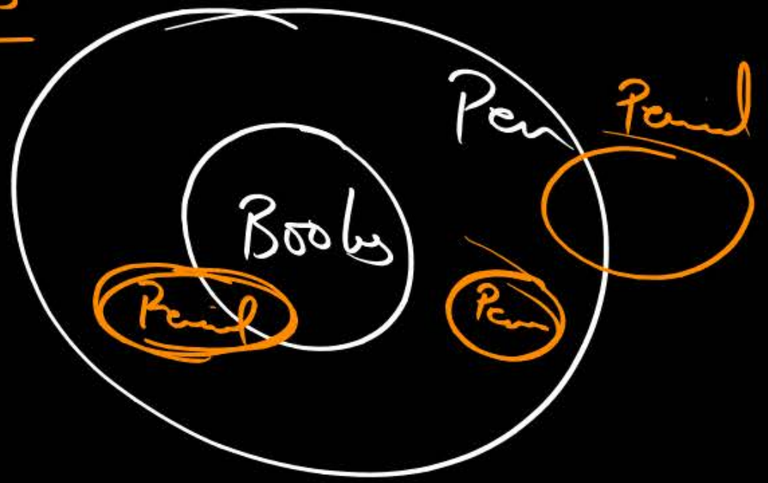
Assignment

Venn Diagrams

(A) All books are Pens

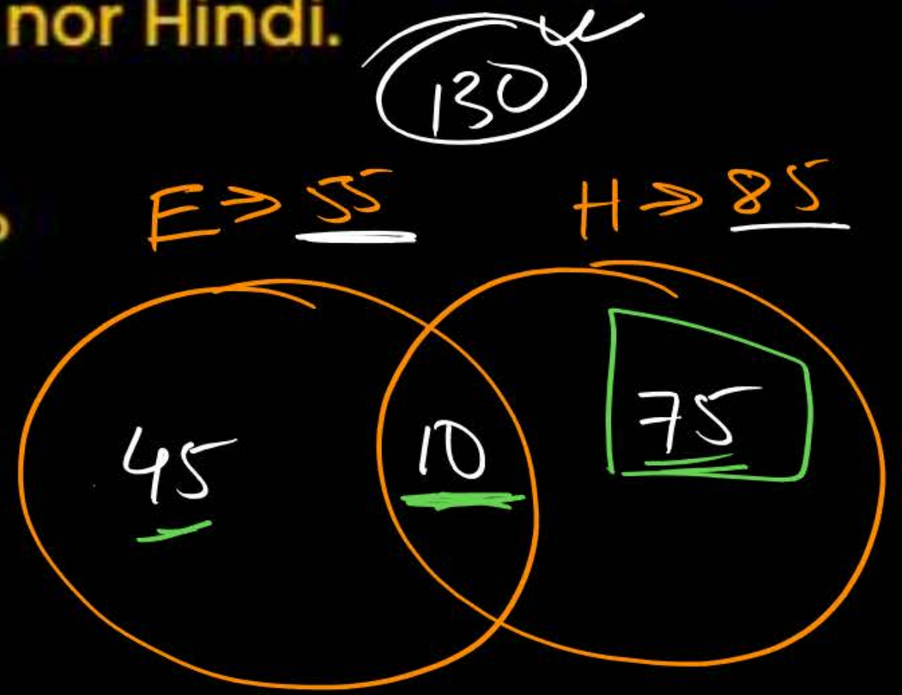


(B) Some pen are Pencils



Q. In a class of 150 students, 55 speak English; 85 speak Hindi and 20 speak neither English nor Hindi.

- How many speak both English and Hindi?
- How many speak only Hindi?



10

55
85
140

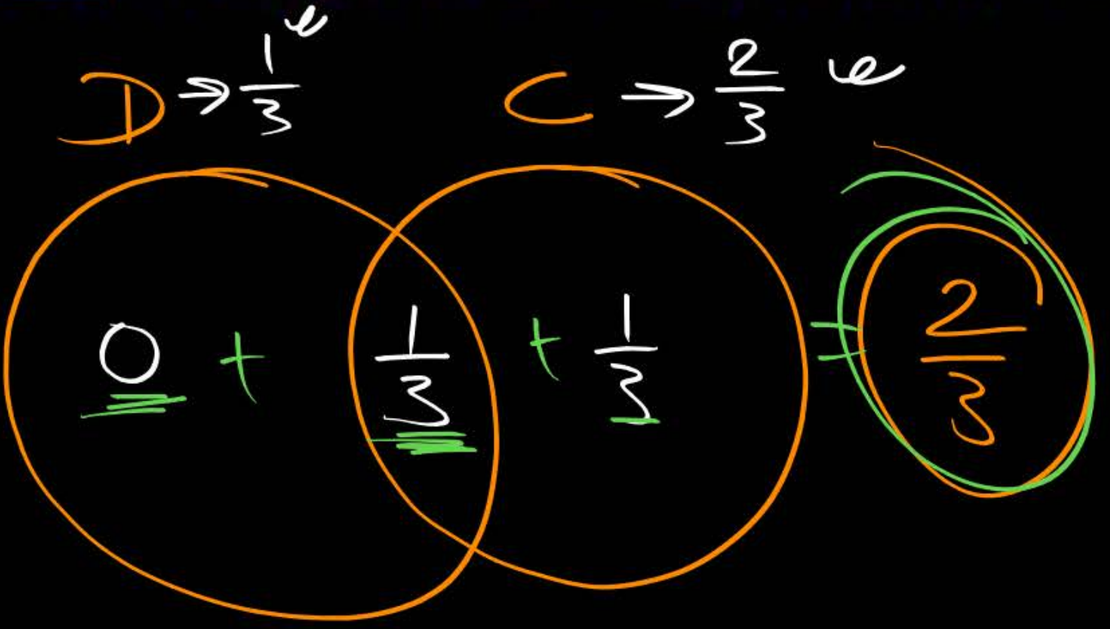
75

20

Q. In the pack of plates, 1/3 plates are damaged, 2/3 plates are cracked and 1/3 of them are damaged and cracked. If 80 plates are not hampered, then what is the number of total plates?

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

$\frac{1}{3}$ of Total Plates are not hampered

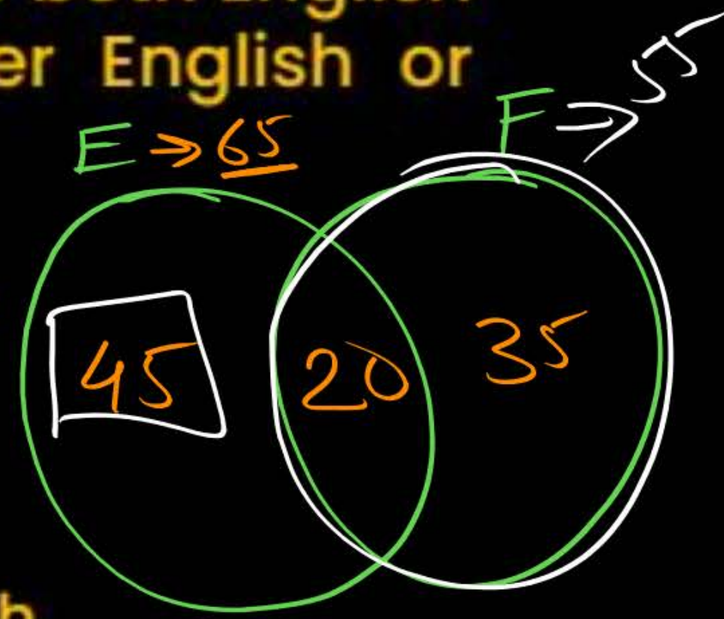


$\frac{1}{3}$ of T.N.P = 80

T.N.P = 80 × 3 = 240

Q. In a class, there are 100 students. Out of those 65 students take English and 20 students take both English and French. If every student takes either English or French or both, then

- What is the number of students who take French?

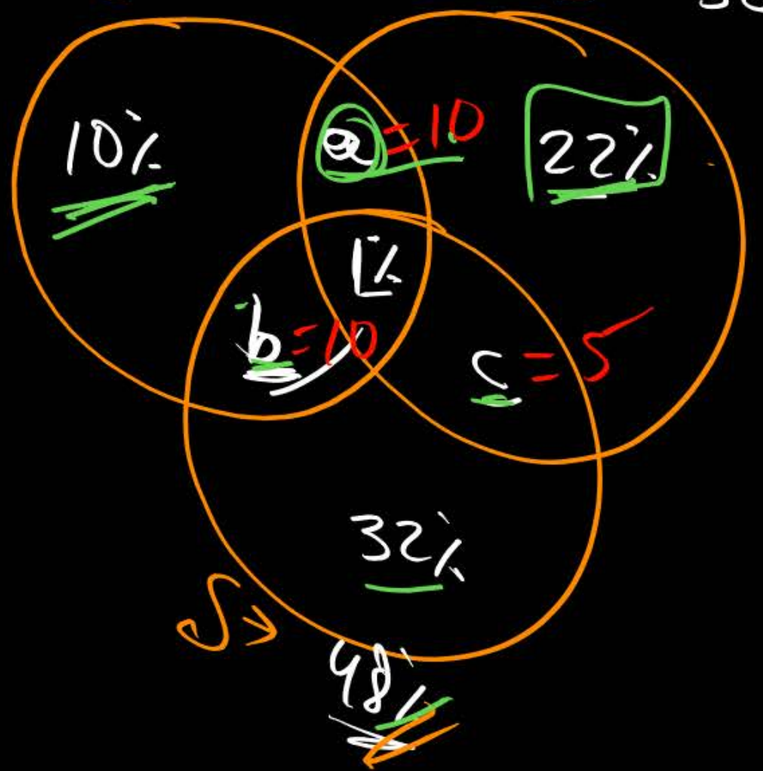


- Find the number of students who takes only English.

10% of T.N. Houses = 40

T.N.H = 400

Q. In a survey conducted for a society, it was found that 31% of houses have cars, 38% bikes and 48% scooter. 10% of the houses have just car. 22% have just bike. 32% have just scooter. 1% have a car, bike and scooter. 10% have none of three things. Thus 40 houses do not have these vehicles.



$10\% + a + 1\% + b = 31\%$

$2(a+b+c) = 50\%$

$a+b+c = 25\%$

$a+b = 20\%$

$b+c = 15\%$

$a+c = 15\%$

$10\% \text{ of } x = 40$

$x = \frac{40 \times 100}{10}$

$= 400$

10% 40

Q.

$0.22 \times 400 =$ 88

- How many houses have bikes only? 22

0.25×400

- How many houses have exactly two vehicles? ~~0~~ 100

0.1×400

- How many houses have only cars? 116 10 40

$0.64 \times 400 =$ 256

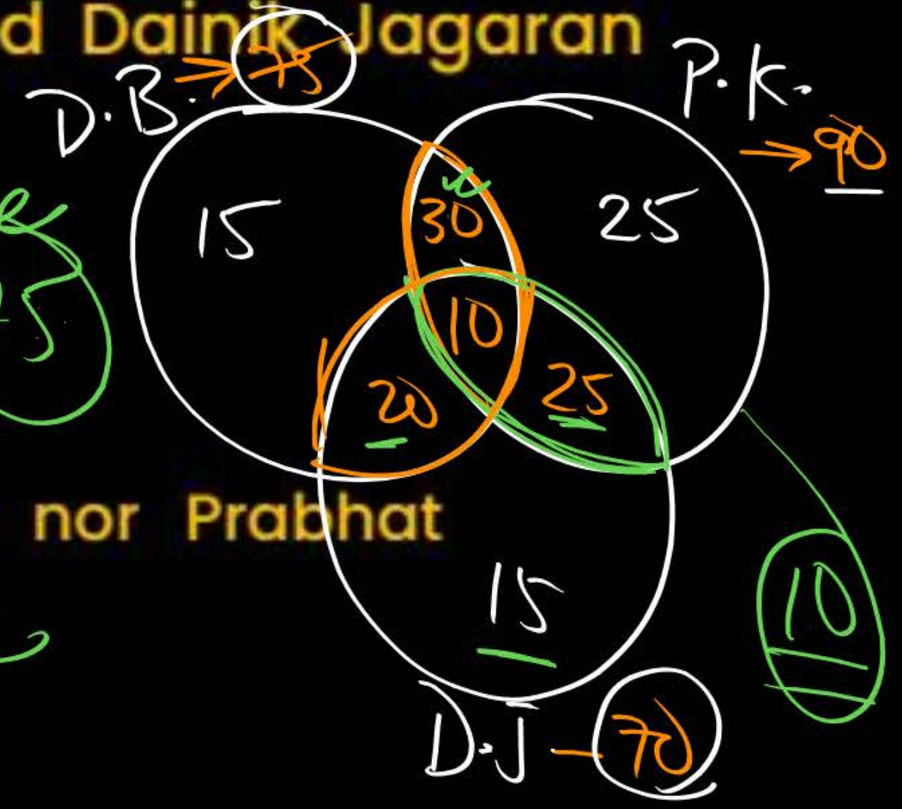
- How many houses have only one vehicle? ~~4 64 10 75~~

- How many houses do not have a scooter?

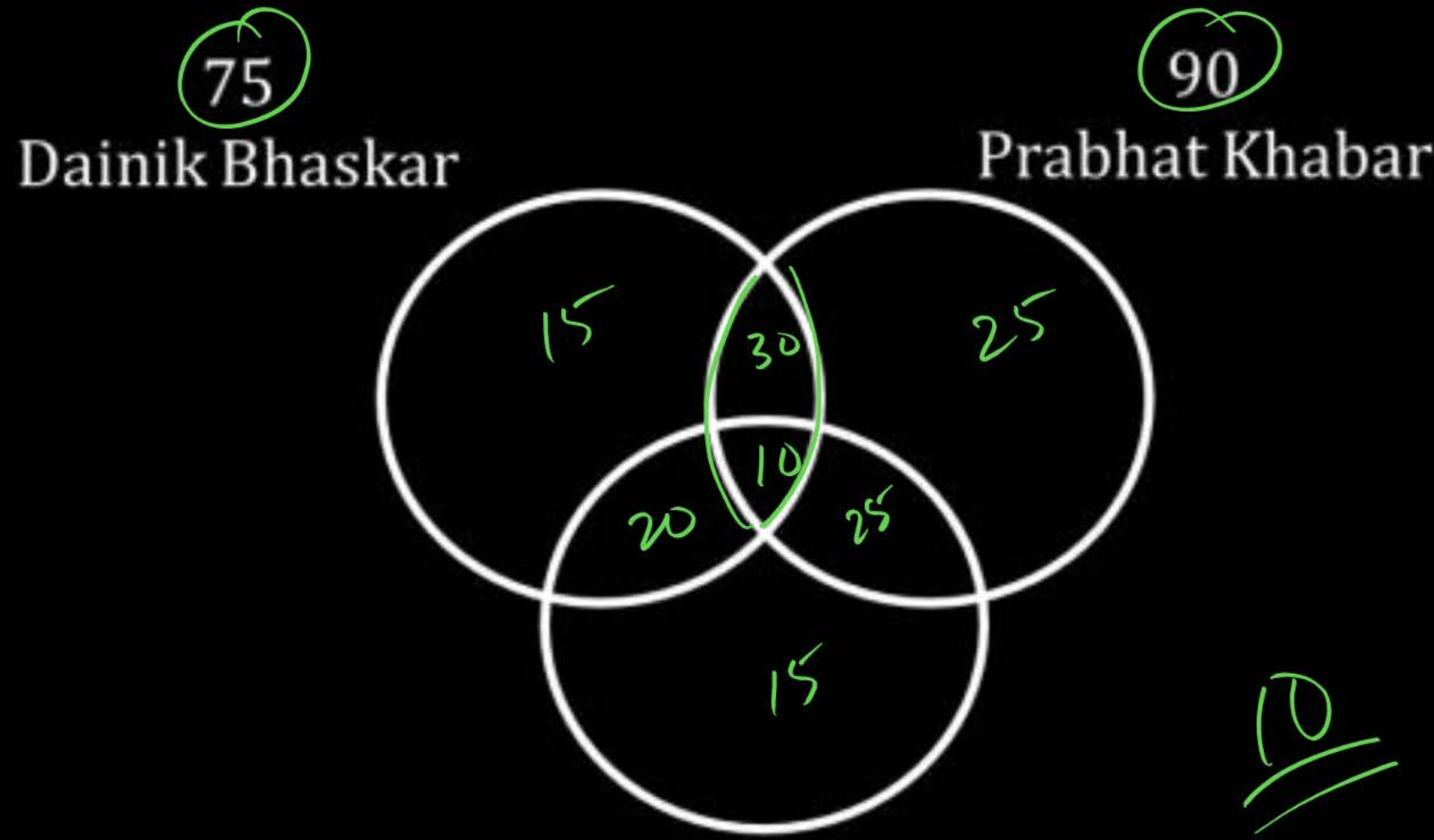
$0.52 \times 400 =$ 208

Q. In a survey of 150 readers it has been found that 75 read Dainik Bhaskar, 90 read Prabhat Khabar and 70 read Dainik Jagaran. 40 read Dainik Bhaskar and Prabhat Khabar; 35 read Prabhat Khabar and Dainik Jagaran; 30 read Dainik Bhaskar and Dainik Jagaran and 10 read all the three.

- How many read exactly two newspapers?
- How many read neither Dainik Bhaskar nor Prabhat Khabar?

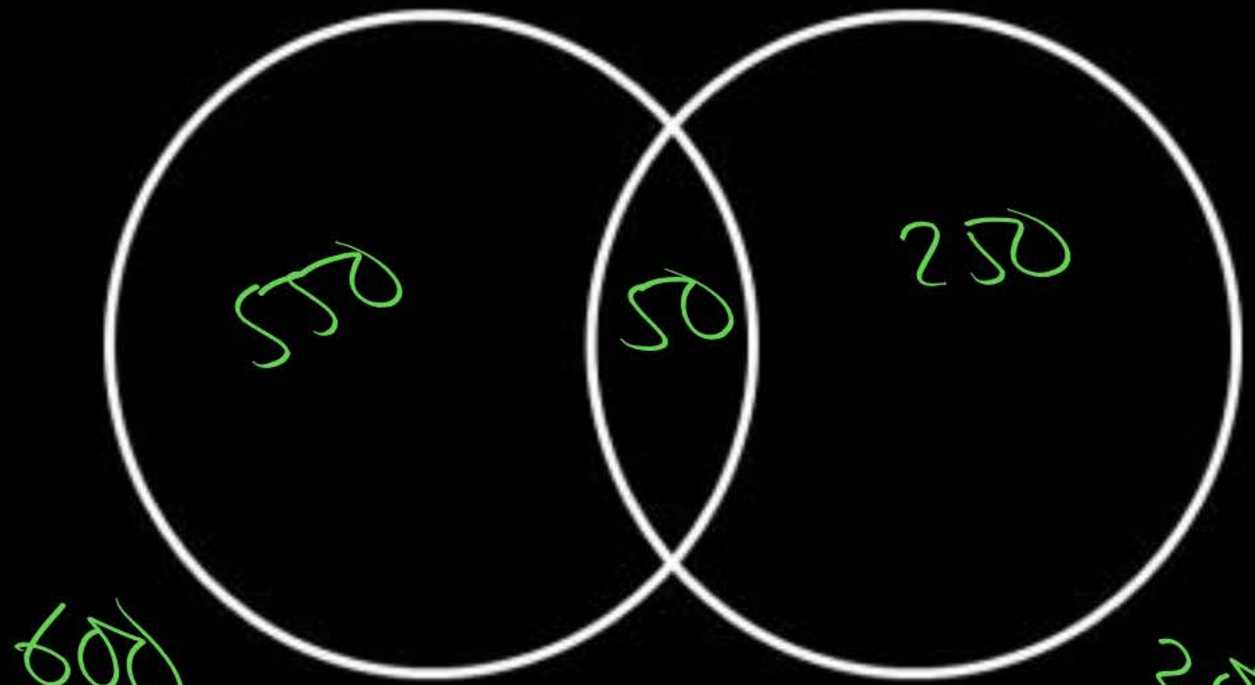


150 READERS



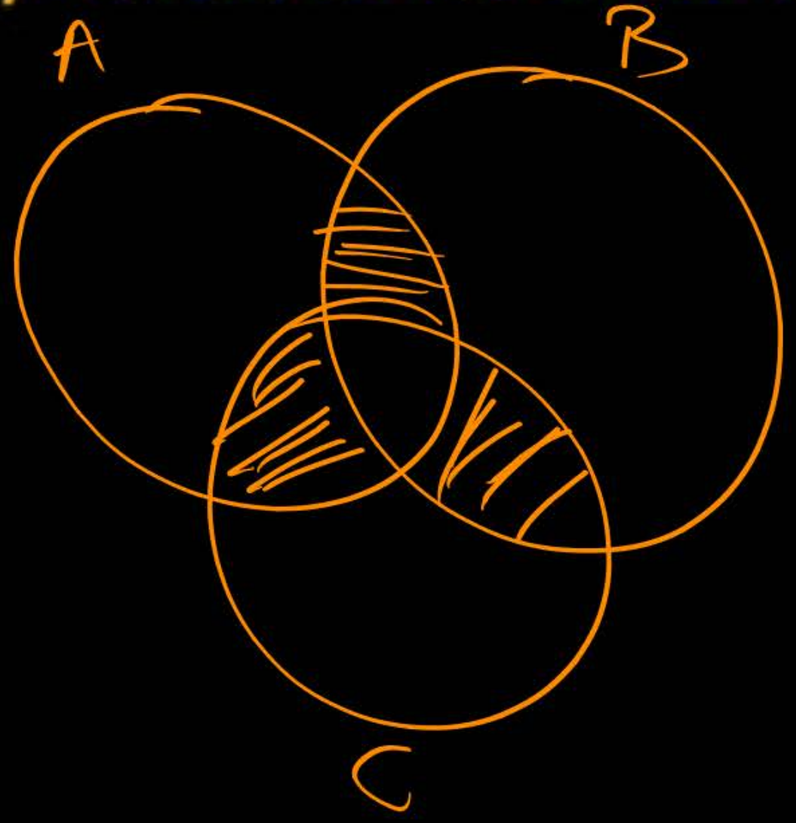
10

Q. In a class with 1000 students, 600 play chess, 300 play hockey and 50 play both the games. The number of students neither play chess nor hockey is _____



1000
-850
150

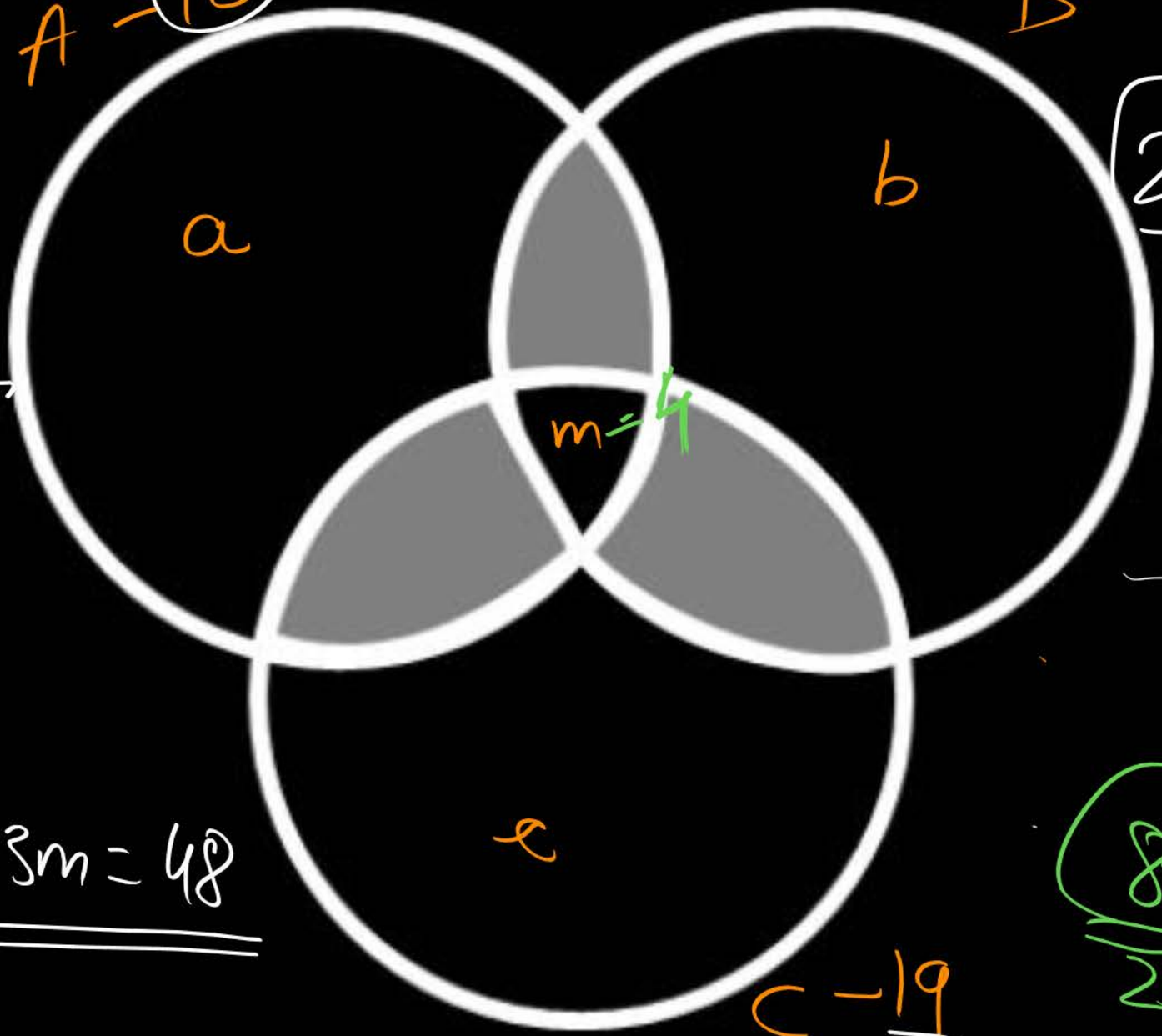
Q. There are 40 students in a class. They have to watch movies from A, B and C. They either watch one or all three movies. 16 students watch A, 13 students watch B, 19 students watch C. How many students watched all three movies?



40

A = 16

B = 13



$a+b+c+m=40$

$a+m=16$

$b+m=13$

$c+m=19$

$a+b+c+3m=48$

$2m=8$

$m=4$

16
13
19
48

8

C = 19

Q. The following table gives the statistics of a class in which each student opted for Maths or Statistics or both. Unfortunately most of the figures have been erased but I remember some information as follows:

I. 13 1/3% of the students took both Math's and Statistics
II. 40% of the students were females.
III. None of the females took both Mathematics and Statistics.

	Maths	Statistics	Both	Total
Male	50	20	20	90
Female	10	50	X	60
Total	60	70	20	150

Q.

$13\frac{1}{3}\%$

$\frac{40}{3}\%$

How many males took both Mathematics and Statistics?

a) 40 b) 10 c) 20 d) 60

$\frac{40}{3\times100} = \frac{40}{300}$

How many students took only Mathematics?

a) 50 b) 80 c) 60 d) 10

Q. In a class of 160 students, it was found that 65 play Cricket 70 play Hockey and 90 play Football, 30 play Cricket and Hockey, 40 Cricket and Football, 35 play Hockey and Football and 15 play none of these three games.

- How many play all three games?
- How many students play exactly one game?

Q. During the cultural day of a college, 235 students participated. Out of them, 100 participated in art, 105 participated in music and 95 participated in dance. 20 participated in none of these three. 45 participated in exactly two of the above three events. 20 students participated in all three events.

Assignment

If 45 students participated in only art, then how many students participated in both music and dance but not art?

(a) 10 (b) 15 (c) 20 (d) 25

If 20 students participated in both art and dance but not music, then how many students participated in music only?

(a) 55 (b) 60 (c) 65 (d) 50

Q. Given below are two statements followed by two conclusions. Which one of the following options are logically inferred?

Statement 1: Some actors are dancers.

Statement 2: All dancers are fat.

Conclusion I: Some actors are fat.

Conclusion II: All actors are fat.

A. Only I follow

B. Only II follow

C. Both I and II follow

D. Neither I nor II follow

Thank You!