## Banking Daily Quiz Blog - June 1

1. Direction: The following table gives the student data of a college.

There are a total of six departments in the college, namely, $A, B, C, D$, $E$ and $F$, each comprising of three batches. The total number of students belonging to each department and the corresponding boy-girl ratio of each department is given in the table, but some of the information is missing. Study the table and answer the questions that follow.

| Departments | No. of students | Boy : Girl |
| :--- | :--- | :--- |
| A | 324 | - |
| B | 308 | - |
| C | - | $35: 39$ |
| D | - | - |
| E | 216 | $5: 4$ |
| E | 296 | - |

A. If the difference between the number of boys and girls in the department $F$ is 4 more than $5 / 6$ of the difference between the number of boys and girls in the department $E$, then find the boy-girl ratio in department $F$.

A $25: 19$

B $20: 17$

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(D) 15:11
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E $12: 5$

## Solution

Let the number of boys and girls in department $F$ be ' $x$ ' and ' $y$ ' respectively

Total no. of students in department $\mathrm{F}=296$
$\Rightarrow x+y=296$
No. of boys in department $\mathrm{E}=\frac{5}{9} \times 216=120$
No. of girls in department $E=216-120=96$

Difference between no. of boys and girls in dept. $\mathrm{E}=120-96=24$

Hence,

Difference between no. of boys and girls in dept. $F=4+5 / 6 \times 24=4+20$
$=24$
$\Rightarrow x-y=24$

Adding (1) and (2),
$\Rightarrow x+y+x-y=296+24$

$\Rightarrow 2 \mathrm{x}=320$
$\Rightarrow \mathrm{x}=\frac{320}{2}=160$
Substituting in (1),
$\Rightarrow y=296-160=136$
$\therefore$ Boy : girl in department $\mathrm{F}=\mathrm{x}: \mathrm{y}=160: 136=20: 17$
B. In department $A$, the number of students in the three batches are in the ratio $17: 18: 19$. If the number of boys in the three batches are in the ratio $18: 19: 19$ respectively, and the number of girls are in the ratio 16:17:19 respectively, then what is the boy-girl ratio in the whole department $A$ ?

A $19: 18$
(B) $17: 16$

C $16: 15$

D $14: 13$
(E) $\quad 12: 11$

## Solution

Let the number of students in the three batches of department A be ' 17 x ', ' $18 x$ ' and ' $19 x$ '

Total number of students in department $\mathrm{A}=17 \mathrm{x}+18 \mathrm{x}+19 \mathrm{x}=324$
$\Rightarrow 54 \mathrm{x}=324$
$\Rightarrow \mathrm{x}=\frac{324}{54}=6$
Now, let the no. of boys in the three batches be ' 18 y ', ' 19 y ' and ' 19 y '

Also, let the no. of girls in the three batches be ' 16 z ', ' 17 z ' and ' 19 z '

Total no. of students in first batch $=17 \mathrm{x}=17 \times 6=102$
$\Rightarrow 18 y+16 z=102$

Total no. of students in second batch $=18 x=18 \times 6=108$
$\Rightarrow 19 y+17 z=108$

Total no. of students in third batch $=19 x=19 \times 6=114$
$\Rightarrow 19 y+19 z=114$

Subtracting (2) from (3),
$\Rightarrow 19 y+19 z-19 y-17 z=114-108$
$\Rightarrow 2 \mathrm{z}=6$
$\Rightarrow \mathrm{z}=3$

Substituting in (3),
$\Rightarrow 19 y=114-57$
$\Rightarrow y=\frac{57}{19}=3$
Hence, total no. of boys in department $A=18 y+19 y+19 y=56 y=56 \times$ $3=168$

Total no. of girls in department $\mathrm{A}=16 \mathrm{z}+17 \mathrm{z}+19 \mathrm{z}=52 \mathrm{z}=52 \times 3=156$
$\therefore$ Boy-girl ratio in department $\mathrm{A}=168: 156=14: 13$
C. The average number of students in the departments $B$ and $C$ is $\mathbf{3 0 2}$. If
the number of boys in department $B$ is $\mathbf{2 5 \%}$ more than that in department $C$, then find the total number of girls in departments $B$ and $C$ ?

A 258

B 263

C 276

D $\mathbf{2 8 9}$

E 294

Solution
No. of students in department $B=308$
Average no. of students in departments B and $\mathrm{C}=302$
$\Rightarrow$ No. of students in department C $+308=2 \times 302=604$
$\Rightarrow$ No. of students in department $\mathrm{C}=604-308=296$
Now, boy : girl in department $\mathrm{C}=35: 39$
No. of boys in department $\mathrm{C}=\frac{35}{74} \times 296=140$
No. of girls in department C $=296-140=156$

No. of boys in department B $=(100+25) \%$ of $($ No. of boys in dept. $C)=$ $1.25 \times 140=175$

No. of girls in department $\mathrm{B}=308-175=133$
$\therefore$ Total no. of girls in department B \& C $=156+133=289$
D. The total number of girls in the college is $\mathbf{8 9}$ more than $\mathbf{7 5 \%}$ of the total number of boys in the college. If the total number of students in the college is $\mathbf{3 0}$ less than $\mathbf{6}$ times the number of students belonging to department $B$, what is the difference between the total number of boys and girls in the college?
A
119

B $\quad 134$

C $\mathbf{1 5 8}$

D $\quad 171$

E 197

## Solution

Let the total no. of boys and girls in the college be ' $x$ ' and ' $y$ ' respectively
$\because$ Total no. of girls $=89+75 \%$ of (Total no. of boys)

$$
\begin{align*}
& \Rightarrow \mathrm{y}=89+\frac{75}{100} \mathrm{x} \\
& \Rightarrow \mathrm{y}=89+\frac{3 x}{4} \\
& \Rightarrow 4 \mathrm{y}=356+3 \mathrm{x} \\
& \Rightarrow 4 \mathrm{y}-3 \mathrm{x}=356 \tag{1}
\end{align*}
$$

Now, total no. of students $=6 \times($ No. of students in dept. B) -30
$\Rightarrow x+y=6 \times 308-30$
$\Rightarrow \mathrm{x}+\mathrm{y}=1848-30$
$\Rightarrow \mathrm{x}+\mathrm{y}=1818$
Multiplying (2) by 3 and adding to (1),
$\Rightarrow 4 y-3 x+3 x+3 y=356+5454$
$\Rightarrow 7 y=5810$
$\Rightarrow \mathrm{y}=\frac{5810}{7}=830$
Substituting in (2),
$\Rightarrow \mathrm{x}=1818-\mathrm{y}=1818-830=988$
$\therefore$ Required difference $=\mathrm{x}-\mathrm{y}=988-830=158$
E. The number of students in department $D$ is $\mathbf{4 0 \%}$ more than the average number of students in departments $A \& E$. If the number of girls in department $D$ is 9 more than $\mathbf{1 5 0 \%}$ of the girls in department $E$, then the number of boys in department $D$ is how much more than $185 \%$ of the boys in department $E$ ?

## C 4

## D 5

## E 6

## Solution

Average no. of students in department A and $\mathrm{E}=\frac{324+216}{2}=\frac{540}{2}=270$
No. of students in department $\mathrm{D}=(100+40) \%$ of $270=1.4 \times 270=378$

Boy : girl in department $E=5: 4$
No. of girls in department $\mathrm{E}=\frac{4}{9} \times 216=96$
No. of girls in department $\mathrm{D}=9+150 \%$ of $96=9+144=153$

Hence,

No. of boys in department $\mathrm{E}=216-96=120$

No. of boys in department $\mathrm{D}=378-153=225$

Now, let the required number be ' $x$ '
$\Rightarrow 225=x+185 \%$ of 120
$\Rightarrow 225=x+222$
$\Rightarrow \mathrm{x}=225-222=3$
$\therefore$ The no. of boys in dept. D is 3 more than $185 \%$ of boys in dept. E

What approximate value will come in the place of the question mark '?' in the following question?
2. $434.68 \div 7.5-\mathbf{3 9 . 9 9 \%}$ of $\mathbf{1 2 9 . 8 7}=$ ?

A 6
B

C
5
(D) 16

E $\quad 15$

## Solution

$434.68 \div 7.5-39.99 \%$ of $129.87=$ ?

Taking their approx. values
$\Rightarrow ?=435 \div 7.5-40 \%$ of 130
$\Rightarrow ?=\frac{4350}{75}-\frac{40}{100} \times 130$
$\Rightarrow ?=58-52$
$\Rightarrow ?=6$


What approximate value will come in the place of the question mark '?' in the following question?
3. $\mathbf{1 3 0 . 1 1 \%}$ of $\mathbf{1 1 0 . 0 4} \mathbf{- 2 2 0 . 2 4 \%}$ of $\mathbf{1 2 9 . 8 8}+\mathbf{2 4 . 8 8 \%}$ of ? $=\mathbf{4 4 . 0 7 \%}$ of $\mathbf{2 2 4 . 9 8}+\mathbf{1 4 5 . 1 \%}$ of $\mathbf{2 0 . 0 2}$

A 1074

B $\quad 1078$

C $\mathbf{1 0 8 0}$

D 1005

E $\mathbf{1 0 8 5}$

## Solution

$130.11 \%$ of $110.04-220.24 \%$ of $129.88+24.88 \%$ of $?=44.07 \%$ of $224.98+145.1 \%$ of 20.02

Taking their approx. values
$\Rightarrow 130 \%$ of $110-220 \%$ of $130+25 \%$ of $?=44 \%$ of $225+145 \%$ of 20
$\Rightarrow \frac{130}{100} \times 110-\frac{220}{100} \times 130+\frac{1}{4} \times ?=\frac{44}{100} \times 225+\frac{145}{100} \times 20$

$$
\begin{aligned}
& \Rightarrow 143-286+\frac{?}{4}=99+29 \\
& \Rightarrow \frac{?}{4}=128+286-143 \\
& \Rightarrow ?=271 \times 4 \\
& \Rightarrow ?=1084 \\
& \therefore ? \approx 1085
\end{aligned}
$$

What approximate value will come in the place of the question mark '?' in the following question?
4. $\mathbf{8 5 8 . 2 3 1} \div \mathbf{3 9 . 3 4 5} \times \mathbf{7 4 . 1 5 4 - 1 4 9 9 . 9 8}+\mathbf{3 1 . 7 9 8}=(2)^{?} \times \mathbf{9 . 8 7 9}$
A 2

B 3

C 4
(D) 5

## E 7

## Solution

$858.231 \div 39.345 \times 74.154-1499.98+31.798=(2)^{?} \times 9.879$

Taking their approx. values
$\Rightarrow \frac{858}{39} \times 74-1500+32=(2)^{?} \times 10$
$\Rightarrow 1628-1500+32=(2)^{?} \times 10$
$\Rightarrow 128+32=(2)^{?} \times 10$
$\Rightarrow \frac{160}{10}=(2)^{?}$

$$
\begin{aligned}
& \Rightarrow(2)^{?}=16 \\
& \Rightarrow(2)^{?}=16 \\
& \Rightarrow ?=4
\end{aligned}
$$

What approximate value will come in the place of the question mark '?' in the following question?
5. $31.992 \times \frac{28.196}{6.932}+677.993-320.898=? \times 4.889$
A
82

B 88

C $\quad 89$

D 97

E $\quad 78$

## Solution

$31.992 \times \frac{28.196}{6.932}+677.993-320.898=? \times 4.889$
Taking their approx. values
$\Rightarrow 32 \times \frac{28}{7}+678-321=? \times 5$
$\Rightarrow 32 \times 4+678-321=? \times 5$
$\Rightarrow ? \times 5=128+678-321$
$\Rightarrow ?=\frac{485}{5}$
$\Rightarrow ?=97$

What approximate value will come in place of question mark (?) in the following question?
6. $?=8.97-4.05+9.02 \div 2.99 \times 4.04+(1.56)^{2}$

A $\quad 10$

B $\quad 20$

C 30
(D) 45

E $\quad 40$

## Solution

$$
?=8.97-4.05+9.02 \div 2.99 \times 4.04+(1.56)^{2}
$$

Rewriting equation with approximate values:
$\Rightarrow ? \approx 9-4+9 \div 3 \times 4+(1.6)^{2}$
$\Rightarrow ?=9-4+3 \times 4+2.56$
$\Rightarrow ?=5+12+2.6$
$\Rightarrow ?=19.6 \approx 20$
$\therefore ?=20$

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