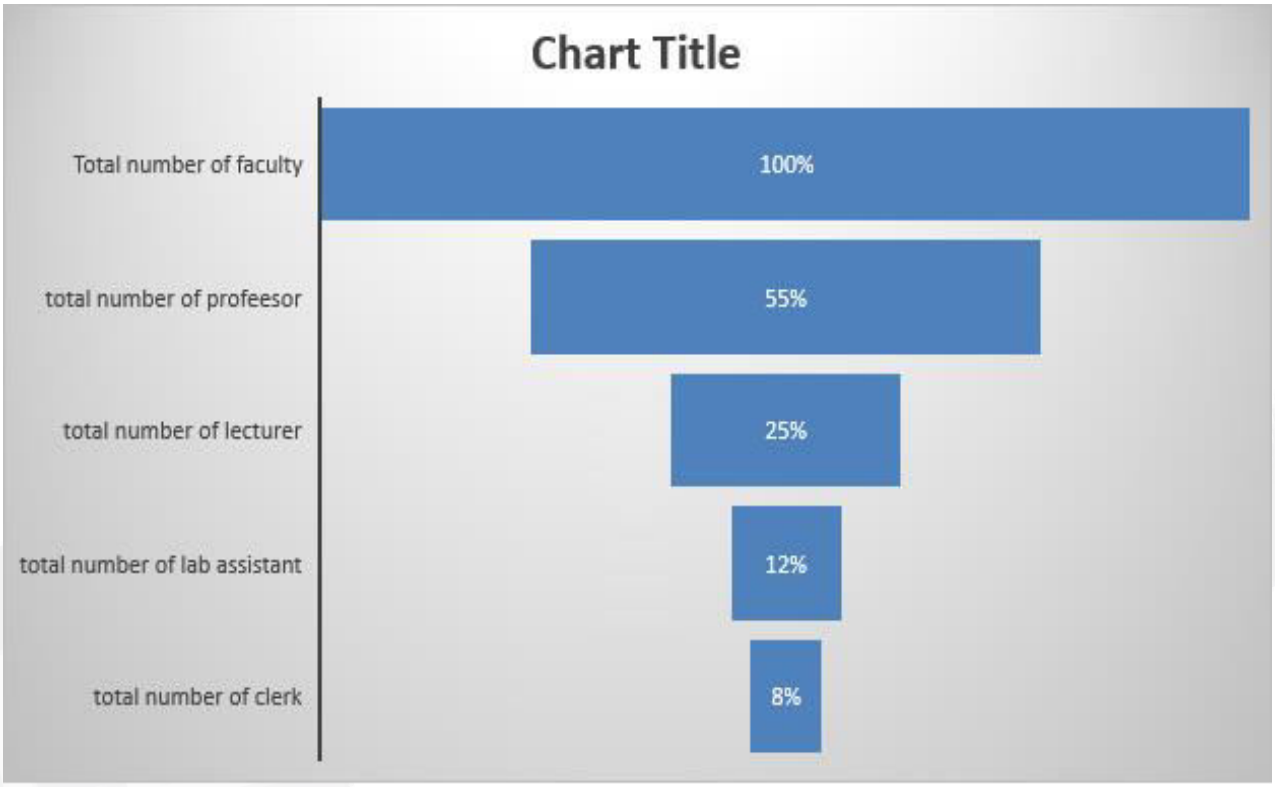
Quantitative Aptitude

Directions (1 - 5): Study the information and answer the following question.

The below funnel DI gives information about the total number of faculty and percentage of faculty in different posts out of the total faculty in each department of a university.



1) Find the difference between the number of clerks in department A and department B, if the total number of lab assistants in A is 48 and the total number of lecturers in B is 50.

A.63
B.18
C.44
D.15
E.16

2) Total number of faculty in department P is 200 and total number of faculty in department Q is 100.

Quantity I: Total number of faculty in the post of professor and clerks of Q is what percentage of the total number of lecturers and lab assistants in department P?

Quantity II: Total number of faculty in the post of professor and clerks of P is what percentage of the total number of lecturers and lab assistants in department Q?

A. Quantity: I < Quantity: II
B. Quantity: I ≥ Quantity: II
C. Quantity: II ≥ Quantity: I
D. Quantity: I > Quantity: II
E. Quantity I = Quantity II or relation can't be established

3) Total number of faculty in department R is 100. Average age of all the professors is 42 years, average age of all the lecturers is 38 years, average age of all the lab assistants is 31 years and the average age of all the clerks is 29 years. Find the average age of the whole department.

A. 37.20 years
B. 54.32 years
C. 38.64 years
D. 52.64 years
E. 48.54 years

4) Total number of clerks in department M is 16 and total number of clerks in department N is 24. Find the total number of faculty in department M is what percent more or less than the total number of professors in department N.

A.76% more
B.21.21% more
C.43%more
D.23% less
E.53% less

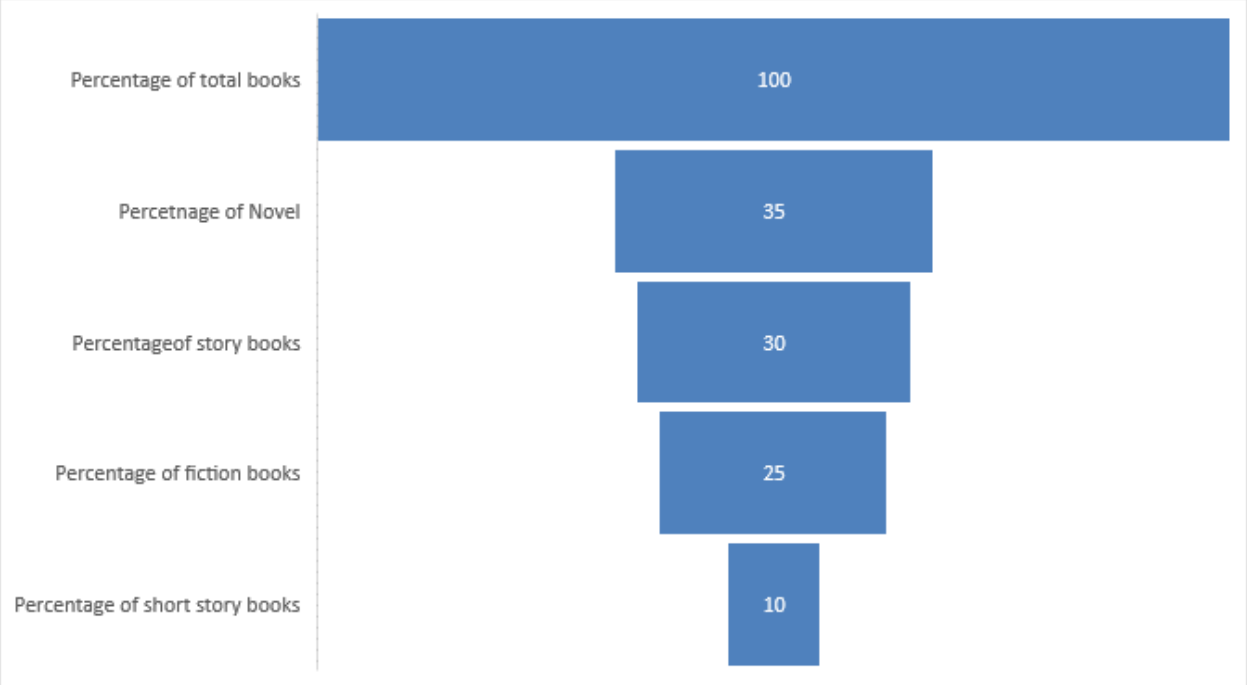
5) Total number of faculty in department S is 100. Each professor guides 6 groups of students and each lecturer guides 5 groups of students. Each student of the department is guided by either professor or lecturer, then find the total number of students in department S.

A.455
B.880
C.423
D.235
E.534

Directions (6-10): Study the information and answer the following question.

The given below Funnel DI shows the information about the Percentage distribution of the number of books in a library.

The numbers of Novels, fiction, storybooks and short story books are calculated from the total number of books.



6. Total number of books in a library 500. Find which degree distribution in the pie chart is correct.

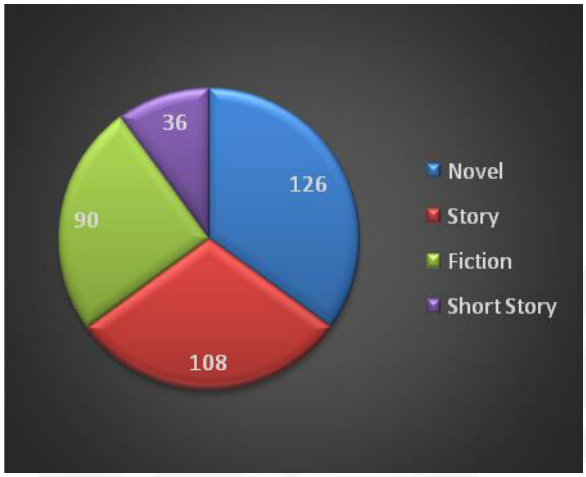
A.

B.

C.

D.

E.



7. Difference between the fiction books in library A and library B is 50. Find the total number of books in library A.

A.153

B.171

C.164

D. cannot be determined

E. None of these.

8. Total number of books in a library is 400. Average number of pages in novels is 300, average number of pages in storybooks is 200, average number of pages in fiction books is 180 and average number of pages in short story books is 150. Find the average number of pages in all books of a library.

A. 320

B. 252

C. 225

D. 258

E. 242

9. Total number of books in both the libraries is the same and the number of books of fiction is 50 in library A and the number of short story books is 30 in library B. Find the difference between the total number of books in library A and library B. (Percentage distribution for both the libraries are taken from the above funnel diagram)

A. 120

B. 100

C. 125

D. 132

E. 225

10.

Quantity I: If the total number of books in a library is 100. Total number of novel and short storybooks together is what percent of the total number of fiction and storybooks together?

Quantity II: If the total number of books in a library is 100.Total number of novel and fiction books together is what percent of the total number of storybooks and short storybooks together?

A. Quantity I < Quantity II

B. Quantity I ≥ Quantity II

C. Quantity II ≥ Quantity I

D. Quantity I > Quantity II

E. Quantity I = Quantity II (or) relationship can't be established

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Answer Key with Explanation

1) Answer E

In department A,

12% = 48

Or 1% = 4

So total number of faculty is 400

So, number of clerks = 400 * 8/100 = 32

In department B,

25% = 50

Or, 1% = 2

So the total number of faculty = 200.

So, number of clerks = 200 * 8/100 = 16

Hence the required difference = 32-16 = 16

2) Answer: A

In Department P,

Number of professors =200*55/100 =110

Number of lecturers =200*25/100 =50

Number of lab assistant =200*12/100 =24

Number of clerks =200*8/100 =16

In Department Q,

Number of professors is 55, lecturer is 25, lab assistant is 12, and clerk is 8.

Quantity I

Required percentage= {[55+8]/[50+24]}*100 = 85.13%

Quantity II

Required percentage= {[110+16]/[25+12]}*100 = 340.54%

Quantity I < Quantity II

3) Answer: C

In Department R, the number of professors is 55, lecturers are 25, lab assistants are 12, and clerks are 8.

Total age of faculty in department R = (42*55)+(38*25)+(31*12)+(8*29) =3864 years

Average age of all the faculties in department R =(3864/100)= 38.64 years

4) Answer: B

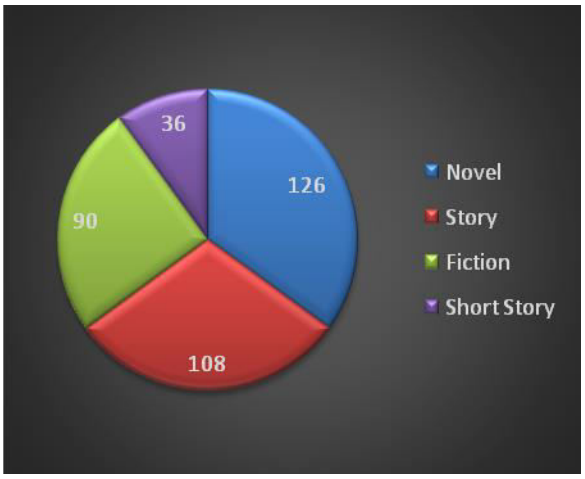
Total number of clerks in department M is 16,
i.e., 8%=16
Or 1%=2
Or 100%=200
Total number of clerks in department N is 24,
i.e., 8%=24
Or,100%=300
Number of Professors in department N = (55*300)/100 = 165
So, the required percentage= [(200-165)/165] *100 =21.21% more

5) Answer: A

In Department S
Number of professors is 55 and the number of lecturers is 25.
Total number of students guided by each professor = 55*6 = 330
Number of students guided by each lecturer = 25*5 = 125
Total number of students in the department S = 330+125 = 455

6. Answer E

Number of Novel books =35*500/100 =175 =126º
Number of story books = 500 * 30 / 100 =150 = 108º
Number of fiction books = 500 * 25 / 100 = 125 = 90º
Number of short story books = 500 * 10 / 100 = 50 = 36º



7. Answer: D

Let total books in library A is 100x and library B is 100y
So, we can say 25x-25y=50
Or, x-y=2
From that we cannot get the exact number of x and y.
So cannot calculate the total number of books library A.

8. Answer: C

Numbers of novel books = 400 * 35 / 100 = 140
Numbers of story books = 400 * 30 / 100 = 120
Numbers of fiction books = 400 * 25 / 100 = 100
Numbers of story books =400*10/100 =40
Total number of pages = 140 * 300 + 120 * 200 + 100 * 180 + 40 * 150 = 90000
Average number of pages = 90000 / 400 = 225

9. Answer: B

Total number of books in library A =50*100/25 =200
Total number of books in library B = 100 * 30 / 10 = 300
So the required difference = 300 – 200 = 100.

10. Answer: A

Quantity I,

Required percentage = [(35 + 10) / (30 + 25)] * 100 = 81.81%

Quantity II,

Required percentage = [(35 + 25) / (30 + 10)] * 100 = 150%

Hence, Quantity I < Quantity II