## $\int_{\text {Lessons }}$

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## Quantitative Aptitude -Data Interpretation- Formulas

## Introduction to Quantitative Aptitude:

Quantitative Aptitude is an important section in the employment-related competitive exams in India. Quantitative Aptitude Section is one of the key sections in recruitment exams in India including but not limited to Banking, Railways, and Staff Selection Commission, Insurance, Teaching, UPSC and many others. The Quantitative Aptitude section has questions related to Profit and Loss, Percentage and Discount, Simple Equations, Time and Work and Quadratic Equations, Data Interpretation etc.

## 1. What isData Interpretation?

Data Interpretation or DI refers to the implementation of procedures through which data is reviewed for the purpose of arriving at an inference. Data can be obtained from multiple sources e.g. data from running of industries, census population data etc. Interpreting data requires analyzing data to infer information from it in order to answer questions. Data can be provided in a number of formats via: Bars, tables, line graphs, pie graphs.
2. What isBar Graphs?

A bar graph or bar chart represents explicit data with rectangular bars. The heights and lengths of these bar graphs are proportional to the values of data they represent. There are two types of bar graph, one is called horizontal bar graph and other is called vertical bar graph. Bar graphs made up of two axis, one is called x - axis and other is called y - axis.

## 3. What is Tables?

In tables, data is described in the form of rows and columns. In DI table's questions, we are required to read data from table/tables analyze the data and answer the questions asked on the basis of the given data.

## What is represented in a Data Interpretation Table?

DI Questions based on Tables are very common in competitive exams. Rows and Columns of tables consist of various types of data like income of company, expenditure on various items, and marks of Applicants and so on. First column and row of tables represent the titles. Level of Questions in Tables may be lower or higher in comparison of other graphs form, depending on given data in the table and the way, questions are framed.

## 4. What is Line Graphs?

A line graph basically is used to visualize values over a certain time period. It is basically used to change over time as various points of data connected by straight line on two axes. It helps to determine the relationship between two sets of values; and also one data set is always dependent on the other set.

## 5. What isPie Charts?

Pie charts are circular shaped graphs which are divided into sectors to represent numerical proportions. In a pie chart, the central angle of a particular sector is proportional to the quantity it represents.

## Data Interpretation Forms:-

As every one of you know Data can be composed or spoke to in 4 Forms

1. Numerical: - Data in numerical structure
2. Table Form: - Data in Tabular structure
3. Mixed form: - Data in Mix Form
4. Graphical structure Like Line, Bar chart and so forth.

## QUICK TIPS AND TRICKS

## Tabular Data Interpretation:

## Funda 1 - Calculating (Approximating) Fractions:

- When trying to calculate (approximate) a fraction $p / q$, add a value to the denominator and a corresponding value to the numerator before calculating (approximating).


## Funda 2 Comparing Fractions:

- If you add the same number to the numerator and denominator of a proper fraction, the value of the proper fraction increases.
- If you add the same number to the numerator and denominator of an improper fraction, the value of the improper fraction decreases.

Note: You can remember this by keeping in mind that,

$$
1 / 2 \text { And } 3 / 2>4 / 3>5 / 4>6 / 5 \text {. }
$$

## Funda 3 - Percentage Growth:

- If the percentage growth rate is $r$ for a period of $t$ years, the overall growth rate is approximately: rt + t * (t-1) * r2 / 2
- Note: Derived from the Binomial theorem, this approximation technique works best when the value of ' $r$ ' is small. If the rate is above $10 \%$, then this approximation technique yields bad results. Also, if the rate is $5 \%$ then
- $r=0.05$; if the rate is $7.2 \%$ then $r=0.072$.


## Funda 4 - Comparing Powers:

- Given two natural numbers $a$ and $b$ such that $a>b>1$,
- ab will always be less than ba

Note: There are only two exceptions to this funda. I hope someone in the comments will point them out (anyone?)

## PIE CHART DATA INTERPRETATION

## 1. Start with the heading.

It tells you exactly what you're looking at, yet it's amazing how many students skip the title of the chart and the labels and go straight to the question-stem! Really slow down and examine every tiny piece of writing on and around the pie chart fully before reading the question. What's the biggest slice? The smallest slice? How many slices total? What does each slice represent? What can be readily inferred? Make sure there isn't any additional information printed below the chart that may be required to solve.

## 2. Don't confuse percent's with numbers!

The pie chart may display numbers in each slice (17...19...35, etc.) but these may or may not be percentages. Look for the "\%" symbol, or a note somewhere at the bottom of the pie chart that explains what the numbers actually refer to - a percent is always a fraction of 100 , while a realworld number is always a fraction of a real-world total.

## 3. Round numbers up or down to make the math easier.

Just like in other SAT math questions, the answer choices may be far enough apart so that it is somewhat easy to estimate. Rounding to the nearest whole number, percent, or fractional equivalent can sometimes be the simplest way to solve. For example, $47.8 \%$ could become $50 \%$, and $69 \%=2 / 3$. If you're pressed for time, approximation can help you eliminate four choices faster than doing the math with the most-accurate values.

## 4. Don't forget your knowledge of circles.

Just like in a Geometry question, we can always set up proportions based on part/whole ratios. You might not need to use Circle properties forthese Data Analysis questions, but its good knowledge to have up your sleeve! A sector (or "slice") of a pie chart is always part of the entirearea of the pie chart, and an arc of the pie chart is always part of the entire circumference.

## Quick Looks

- Total angle at the center of a pie chart $=36003600$
- To convert k\% percentage into angle $=k 100 \times 3600 \mathrm{k} 100 \times 3600$
- To convert into percentage $=\mathrm{m} 360 \times 100 \mathrm{~m} 360 \times 100$


## Tabular Data Interpretation formulas

## 1. Average:

Average =total of data/No.of data

## 2. Percentage:

If we have to find $y \%$ of $x$, then
$y \%$ of $x=\left(x^{*} y\right) / 100$

## 3. Ratio \& Proportion:

The ratio of $a$ to $b$ is written as $a: b=a / b$
The idea of proportions is that two ratio are equal. If $a: b=c: d$, we write $a: b:: c: d$

## Examples:

Directions (1-5):
Expenditures of a Company (in Lakh Rupees) per Annum Over the given Years.

| Year | Item of Expenditure |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Salary | Fuel and Transport | Bonus | Interest on Loans | Taxes |
| 1998 | 288 | 98 | 3.00 | 23.4 | 83 |
| 1999 | 342 | 112 | 2.52 | 32.5 | 108 |
| 2000 | 324 | 101 | 3.84 | 41.6 | 74 |
| 2001 | 336 | 133 | 3.68 | 36.4 | 88 |
| 2002 | 420 | 142 | 3.96 | 49.4 | 98 |

1. What is the average amount of interest per year which the company had to pay during this period?
A. Rs. 32.43 lakhs
B. Rs. 33.72 lakhs
C. Rs. 34.18 lakhs
D. Rs. 36.66 lakhs

Answer: D

## Explanation:

Average amount of interest paid by the Company during the given period
$=$ Rs. $\quad\left[\frac{23.4+32.5+41.6+36.4+49.4}{5}\right]$ lakhs
$=$ Rs. $\left[\frac{[183.3]}{5}\right]$ lakhs
$=$ Rs. 36.66 lakhs.
2. The total amount of bonus paid by the company during the given period is approximately what percent of the total amount of salary paid during this period?
A. $0.1 \%$
B. $0.5 \%$
C. $1 \%$
D. $1.25 \%$

## Answer: C

## Explanation:

Required percentage $=\left[\frac{(3.00+2.52+3.84+3.68+3.96)}{(288+342+324+336+420)} \quad \times 100\right] \%$
$=\left[\frac{17}{1710} \times 100\right] \%$
$\approx 1 \%$.
3. Total expenditure on all these items in 1998 was approximately what percent of the total expenditure in 2002?
A. $62 \%$
B. $66 \%$
C. $69 \%$
D. $71 \%$

Answer: C

## Explanation:

Required percentage $=\left[\frac{(288+98+3.00+23.4+83)}{(420+142+3.96+49.4+98)} \times 100\right] \%$
$=\left[\frac{495.4}{713.36} \times 100\right] \%$
$\approx 69.45 \%$.
4. The total expenditure of the company over these items during the year $\mathbf{2 0 0 0}$ is?
A. Rs. 544.44 lakhs
B. Rs. 501.11 lakhs
C. Rs. 446.46 lakhs
D. Rs. 478.87 lakhs

Answer: A

## Explanation:

Total expenditure of the Company during 2000
$=$ Rs. $(324+101+3.84+41.6+74)$ lakhs
= Rs. 544.44 lakhs.
5. The ratio between the total expenditure on Taxes for all the years and the total expenditure on Fuel and Transport for all the years respectively is approximately?
A. $4: 7$
B. $10: 13$
C. $15: 18$
D. $5: 8$

## Answer: B

## Explanation:

Required ratio $=\left[\frac{(83+108+74+88+98)}{(98+112+101+133+142)}\right]$
$=\left[\frac{451}{586}\right]$
$=\frac{1}{1.3}$
$=\frac{10}{13}$

Directions (6-10):
Number of Candidates Appeared and Qualified in a Competitive Examination from Different States Over the Years.

| State | Year |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1997 |  | 1998 |  | 1999 |  | 2000 |  | 2001 |  |
|  | App. | Qual. | App. | Qual. | App. | Qual. | App. | Qual. | App. | Qual. |
| M | 5200 | 720 | 8500 | 980 | 7400 | 850 | 6800 | 775 | 9500 | 1125 |
| N | 7500 | 840 | 9200 | 1050 | 8450 | 920 | 9200 | 980 | 8800 | 1020 |
| P | 6400 | 780 | 8800 | 1020 | 7800 | 890 | 8750 | 1010 | 9750 | 1250 |
| Q | 8100 | 950 | 9500 | 1240 | 8700 | 980 | 9700 | 1200 | 8950 | 995 |
| R | 7800 | 870 | 7600 | 940 | 9800 | 1350 | 7600 | 945 | 7990 | 885 |

6. Total number of candidates qualified from all the states together in 1997 is approximately what percentage of the total number of candidates qualified from all the states together in 1998?
A. $72 \%$
B. $77 \%$
C. $80 \%$
D. $83 \%$

Answer: C
Explanation:
Required percentage
$=\left[\frac{(720+840+780+950+870)}{(980+1050+1020+1240+940)} \times 100\right] \%$
$=\left[\frac{4160}{5230} \times 100\right] \%$
$=79.54 \% \approx 80 \%$.
7. What are the average candidates who appeared from State $\mathbf{Q}$ during the given years?
A. 8700
B. 8760
C. 8990
D. 8920

Answer: C

Required average $=\frac{8100+9500+8700+9700+8950}{5}$
$=\frac{44950}{5}$
$=8990$.
8. In which of the given years the number of candidates appeared from State $\mathbf{P}$ has maximum percentage of qualified candidates?
A. 1997
B. 1998
C. 1999
D. 2001

## Answer: D

## Explanation:

The percentages of candidates qualified to candidates appeared from State $P$ during different years are:
For $1997\left(\frac{780}{6400} \times 100\right) \%=12.19 \%$.
For $1998\left(\frac{1020}{8800} \times 100\right) \%=11.59 \%$.
For $1999\left(\frac{890}{7800} \times 100\right) \%=11.41 \%$.
For $2000\left(\frac{1010}{8750} \times 100\right) \%=11.54 \%$.
For $2001\left(\frac{1250}{9750} \times 100\right) \%=12.82 \%$.
Therefore Maximum percentage is for the year 2001.
9. What is the percentage of candidates qualified from State $\mathbf{N}$ for all the years together, over the candidates appeared from State $\mathbf{N}$ during all the years together?
A. $12.36 \%$
B. $12.16 \%$
C. $11.47 \%$
D. $11.15 \%$

Answer: D

## Explanation:

Required percentage
$=\left[\frac{(840+1050+920+980+1020)}{(7500+9200+8450+9200+8800)} \times 100\right] \%$
$=\left[\frac{4810}{43150} \times 100\right] \%$
= 11.15\%
10. The percentage of total number of qualified candidates to the total number of appeared candidates among all the five states in 1999 is?
A. $11.49 \%$
B. $11.84 \%$
C. $12.21 \%$
D. $12.57 \%$

## Answer: B

## Explanation:

Required percentage $=\left[\frac{(850+920+890+980+1350)}{(7400+8450+7800+8700+9800)} \times 100\right] \%$
$=\left[\frac{4990}{42150} \times 100\right] \%$
= 11.84\%.

Directions (11-15): The following pie-chart shows the number of students who failed in different subjects in an examination, Examine the chart and answer the following questions. The total number of students who have failed in 500.

11. The number of students failed in science is less than the number of students failed in all other subjects by:
A. 170
B. 140
C. 180
D. 160

Answer: C

## Explanation:

$$
\begin{array}{r}
500 \times\left(\frac{(68-32)}{100}\right) \\
=180
\end{array}
$$

12. The central angle of the sector for the students who have failed in mathematics is:
A. $30^{\circ}$
B. $100^{\circ}$
C. $105.2^{\circ}$
D. $108^{\circ}$

Answer: C

Explanation:
$\frac{30}{100} \times 360$
$=108$
13. Total number of students who did not qualify in Mathematics and Language and Science is:
A. 460
B. 490
C. 480
D. 470

Answer: B

Explanation:
$500 \times \frac{98}{100}$
$=490$
14. Number of students who failed in mathematics is less then the students who did not qualify in languages by:
A. 20
B. 40
C. 30
D. 50

Answer: C
$500 \times\left(\frac{(36-30)}{100}\right)$
$=30$
15. The percentage of students who have failed in mathematics and language is:
A. $65.5 \%$
B. $60 \%$
C. $66 \%$
D. $62 \%$

Answer: C

## Explanation:

$(36+30)=66 \%$
Directions (16-20): The pie-chart given below shows the number of students enrolled in a school in different activities. Total number of students in the school is 1200 . Study the chart and answer the questions.

16. How many students are enrolled in N.C.C. activities?
A. 180
B. 120
C. 72
D. 240

Answer: A

Explanation:
$1200 \times \frac{15}{100}$
$=180$
17. What is the total number of students enrolled in Debating Club and HRD Club?
A. 144
B. 216
C. 288
D. 72

Answer: C
Explanation:
$1200 \times \frac{24}{100}$
288
18. The number of students enrolled in Eco-club is what percent of those enrolled in Redcross activities?
A. $94.24 \%$
B. $95.45 \%$
C. $82.45 \%$
D. $104.76 \%$

Answer: D
Explanation:
$\frac{22}{21} \times 100$
$=104.76 \%$
19. What is the ratio of number of students enrolled in Scout and Redcross activities together to those enrolled in Debating Club activities?
A. $3: 1$
B. $4: 1$
C. $1: 4$
D. $1: 3$

Answer: A
Explanation:
(18\% + 21\%): 13\%
39\%: 13\%

3: 1
20. Which two clubs have the enrolment in the ratio of $2: 1$ ?
A. Eco Club, HRD Club
B. Eco Club, N.C.C.
C. HRD Club, Eco Club
D. Debating Club, Eco Club

Answer: A

Explanation:

Eco Club: HRD Club

22\%: 11\%

2: 1

Directions (20-25): The following pie-chart represents the result of 600 successful students in various subject of an examination. Study the Pie-chart and answer question. $\qquad$

$\square$ Mathematics
-History
-English
-Bengali
21. The ratio of students who passed in Bengali, to the students who passed in History is
A. $1: 2$
B. $2: 1$
C. $3: 4$
D. $3: 5$

Answer: B

Explanation:

144: 72

2: 1
22. The number of students passed in Bengali is greater than the number of students passed in History by
A. 150
B. 60
C. 120
D. 100

## Answer: C

## Explanation:

$600 \times \frac{72}{360}$
$=120$
23. The percentage of students who passed in English is
A. $15 \%$
B. $20 \%$
C. $5 \%$
D. $12 \%$

Answer: A

Explanation:
$\frac{\left(54^{\circ}\right)}{\left(360^{\circ}\right)} \times 100$
= $15 \%$
24. The number of students passed in English is less than the number of students passed in Mathematics by
A. 50
B. 60
C. 90
D. 75

Answer: B
Explanation:
$600 \times \frac{(90-54)}{360}$
$=600 \times \frac{36}{360}$
$=60$

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25. The number of students who passed in Bengali is -
A. 240
B. 320
C. 180
D. 140

Answer: A

Explanation:
$600 \times \frac{144}{360}$
$=240$

Directions (26-30): Read the following information carefully and answer the questions which follow. The following bar graph represents the production, exports and per capita consumption of wheat in of Sri Lanka for five years 2011 to 2015


Consumption $=$ Production - Exports
Per capita consumption $=\frac{\text { Consumption }}{\text { Population }}$

## 26. The ratio of exports to consumption is highest for which year?

A. 2011
B. 2012
C. 2013
D. 2014

Answer: D

Explanation:
In 2011

Production $=200$, Exports $=110$ so consumption $=90 \ln 2012$ Production $=240$, Exports $=130=130$ so consumption = 120 in 2013

Production = 220, Exports = 120 so consumption = 100 In 2014,

Production = 300, Exports = 170 so consumption = $130 \ln 2015$ Production $=250$, Exports $=140$ so consumption = 110 clearly the required ratio is highest for 2014.
27. Which year saw the highest percentage change in production?
A. 2012
B. 2013
C. 2014
D. 2015

## Answer: C

## Explanation:

In 2011 Production $=200$

In 2012

Production $=240$

In 2013

Production $=220$

In 2014,

Production $=300$

In 2015

Production $=250$
So the percentage change in production is highest for the year 2014
28. The population of Sri Lanka was highest in which year?
A. 2014
B. 2013
C. 2015
D. 2012

Answer: A

Explanation:

Lissons

Population $=$ Consumption/per capita consumption
In 2011

Consumption $=90$, per capita consumption $=40$
In 2012

Consumption $=120$, per capita consumption $=50$
In 2013

Consumption $=100$, per capita consumption $=40$

In 2014

Consumption $=130$, per capita consumption $=30$

In 2015

Consumption = 110, per capita consumption = 50 clearly, this ratio is highest for the year 2014
29. What was the population of Sri Lanka in 2013?
A. 2.5 million
B. 2.5 lacks
C. 3 million
D. 3 lack's

Answer: A

## Explanation:

In 2013

Consumption $=100$, per capita consumption $=40$
So required population $=\frac{100}{40}=2.5$ million.
30. The percentage change in consumption is highest for which year?
A. 2012
B. 2014
C. 2015
D. It was same for two years.

Answer: B

Explanation:

In 2011 Production = 200, Exports $=110$ so consumption $=90$

In 2012

Production $=240$, Exports $=130$ so consumption $=110$

## In 2013

Production $=220$, Exports $=120$ so consumption $=100$

## In 2014

Production $=300$, Exports $=170$ so consumption $=130$
In 2015

Production $=250$, Exports $=140$ so consumption $=110$

So the percentage change in consumption is highest for the year 2014

Directions $(31-35)$ : In a film industry every movie belongs to one of the five genres Action, Comedy, Drama, Horror and Science Fiction. Also, every movie falls in one category Hit or Flop

Following table shows the number of movies from each genre released in this movie industry in the industry in the year 2015

| Name of the Genre | Action | Comedy | Drama | Horror | Science Fiction |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Number of movies | 156 | 216 | 256 | 125 | 192 |

Following table gives the hit and flop status of movies released in the year 2015 including those of a superstar called KRK

| Name of Genre | Action | Comedy | Drama | Horror | Science Fiction |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Hit movies as a \% of total movies | 33.33 | 62.5 | 37.5 | 20 | 25 |
| Hit movies by KRK as a \% of total movies by KRK | 50 | 70 | 60 | 30 | 10 |
| Flop movies by KRK as a \% of total flop movies | 12.5 | 11.11 | 5 | 7 | 6.25 |

31. What is the total number of hit movies of KRK across the genres Comedy, Drama and Horror in the year 2015?
A. 36
B. 39
C. 42
D. 46

Answer: A

Explanation (31-35):

| Name of the Genre | Action | Comedy | Drama | Horror | Science Fiction | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total Movies | 156 | 216 | 256 | 125 | 192 | 945 |
| Hit Movies | 52 | 135 | 96 | 25 | 48 | 356 |
| Flop Movies | 104 | 81 | 160 | 100 | 144 | 589 |
| Hit movies by KRK | 13 | 21 | 12 | 3 | 1 | 50 |
| Flop movies by KRK | 13 | 9 | 8 | 7 | 9 | 46 |
| Total Movies by KRK | 26 | 30 | 20 | 10 | 10 | 96 |

32. What percentage of the total movies that released in the year 2015 were flops?
A. $49.25 \%$
B. $55.65 \%$
C. $62.33 \%$
D. $66.48 \%$

Answer: C
33. What percentage of the total movies that released in the year 2015 were flops?
A. $49.25 \%$
B. $55.65 \%$
C. $62.33 \%$
D. $66.48 \%$

## Answer: D

34. Across how many genres was the number of hits more than the number of flops for the actor KRK?
A. 1
B. 2
C. 3
D. 4

## Answer: B

35. How many movies of KRK were flops across the genres Action, Horror and Science fiction?
A. 16
B. 23
C. 29
D. None of these

Answer: C
Directions (35-40): Study the data given below and answer the following questions. The pie charts shown below shows the distance covered by a boat moving upstream and downstream in different days of a week. And the table shows the speed of stream in km/hr. in different days of a week.


| Day | Speed of stream (km/hr) |
| :---: | :---: |
| Monday | 5 |
| Tuesday | 2 |
| Wednesday | 6 |
| Thursday | - |
| Friday | 1 |
| Saturday | - |
| Sunday | 3 |

36. If the time taken by boat to travel upstream on Wednesday is $6 / 7$ times than the time taken to travel downstream on Monday and the speed of boat in still water on Monday is $\mathbf{1 5} \mathbf{~ k m p h}$ then find the speed of boat in still water on Wednesday? (speed of boat in still water is different for different days)
A. 52 kmph
B. 62 kmph
C. 42 kmph
D. None of these

Answer: D
$\frac{12 \times 48}{x-6}=\frac{12 \times 24}{15-5} \times \frac{6}{7}$
$x-6=40$
$X=46 \mathrm{~km} / \mathrm{hr}$
37. If the time taken by boat to travel upstream on Monday is $271 / 5 \mathrm{hrs}$. More than the time taken by it to travel downstream on the same day, then finds the speed of boat in still water on Monday? (Speed of boat in still water is same in upstream as in downstream)
A. 25 kmph
B. 18 kmph
C. 20 kmph
D. 15 kmph

Answer: A

Explanation:
$\frac{16 \times 48}{X-5}=\frac{14 \times 24}{X+5}+27 \frac{1}{5}$
38. If the speed of boat in still water on Saturday was $27 \mathrm{~km} / \mathrm{hr}$ and the speed of boat in still water on Wednesday was $662 / 3 \%$ more than that of Saturday and time taken to travel upstream on Wednesday is $16 / 13$ times than time taken by it to travel downstream on Saturday, then find the speed of stream (in kmph) on Saturday?
A. 2
B. 4
C. 9
D. 8

Answer: C

## Explanation:

Given

Speed of boat in still water on Saturday $=27 \mathrm{~km} / \mathrm{hr}$
And Speed of boat in still water on Wednesday $=27+18$

$$
=45 \mathrm{~km} / \mathrm{hr}
$$

Now, $\frac{12 \times 48}{45-5}=\frac{18 \times 28}{27+\mathrm{x}} \times \frac{16}{13}$
$X=9 \mathrm{kmph}$
39. The speed of boat in still water on Saturday was 21 km/hr. and that on Sunday was 284/7\% more than that on Saturday, if the time taken by boat to travel upstream on Saturday is 21/2 times than
time taken to travel downstream on Sunday, then find the time taken by the boat to cover a distance of 125 km upstream on Saturday?
A. 6 hrs .45 min .
B. 2 hrs .45 min .
C. 4 hrs .30 min .
D. 6 hrs. 15 min .

## Answer: D

## Explanation:

Speed of boat in still water on Saturday $=21 \mathrm{~km} / \mathrm{hr}$
Speed of boat in still water on Sunday $=21+6=27 \mathrm{~km} / \mathrm{hr}$
$\frac{10 \times 48}{21-\mathrm{x}}=\frac{5}{2} \times \frac{12 \times 24}{27+3} \times \frac{16}{13}$
$21-x=20$
$X=1 \mathrm{~km} / \mathrm{hr}$
$X=1 \mathrm{~km} / \mathrm{hr}$

Required time $=\frac{125}{21-1}=\frac{125}{20}$
40. If the time taken by boat to travel upstream on Friday is $\mathbf{3 0}$ hours more than the time taken by it to travel downstream on Wednesday and the speed of boat in still water on Friday is $\mathbf{1 7} \mathbf{~ k m p h}$, then find the upstream speed of boat on Wednesday? (speed of boat in still water is different on different days)
A. 27 kmph
B. 22 kmph
C. 20 kmph
D. None of these

## Answer: D

Explanation:
$\frac{14 \times 48}{17-1}=30+\mathrm{x} \frac{11 \times 24}{\mathrm{X}+6}$
$x+6=22$
$X=16 \mathrm{~km}$

Upstream speed on Wednesday = $16-6$
$=10 \mathrm{~km} / \mathrm{hr}$

Directions (40-40): Study the following graph carefully and answer the following questions given below.


41. What is the difference between Number of Girls in School A and Number of Girls in School B?
A. 100
B. 101
C. 102
D. 103

Answer: C
Explanation:
School A:
$B+G=10035$
$B-G=373$
Girls $=4831$
In School B:
$B+G=10098$
$B-G=640$
$G=4729$

Difference $=102$
42. Girls in School C form approximately what percent of the total number students in that School?
A. $45.5 \%$
B. $47.5 \%$
C. $48.5 \%$
D. $49.5 \%$

Answer: C

Explanation:
$B+G=10087$
$B-G=285$
$G=4901$
$\%=\frac{4901}{10087}$
43. What is the ratio of Sum of Boys in School D and Girls in School E together to the Sum of Girls in School D and Boys in School E together is?
A. $997: 1012$
B. $999: 1012$
C. 1000:1011
D. $1000: 1013$

Answer: A

Explanation:

School D:
$B+G=10081$
$B-G=475$
$B=5278 G=4803$

In School E:
$B+G=10009$
$B-G=625$
$B=5317 G=4692$

Ratio $=(5278+4692):(4803+5317)$
9970:10120

997:1012
44. How many number of Boys are there in School F?
A. 5134
B. 5234
C. 5334
D. 5444

Answer: B

Explanation:
$B+G=10045$
$B-G=423$
Boys $=5234$
45. In which of the following School least no of Girls are present?
A. School A
B. School B
C. School C
D. School E

Answer: D
Explanation:

From above calculations:

School A: 4831
School B: 4729

School C: 4901
School D: 4803

School E: 4692

Directions (45-50): Study the Pie Chart and answer the following questions

46. The ratio of Number of Vanilla Cakes Sold to Chocolate Cakes Sold is $\mathbf{2 : 1}$ of the total cakes sold on Monday and the ratio of the number of Vanilla Cakes Sold to Chocolate Cakes Sold is $\mathbf{3 : 2}$ in the total Cakes sold on Wednesday. Then difference of Vanilla Cakes Sold on Monday and Vanilla Cakes sold on Wednesday is?
A. 13
B. 14
C. 15
D. 16

Answer: B
Explanation:
Monday Cakes sold $=84 * 11.5=966$
Ratio of Vanilla: Chocolate $=2: 1$
Vanilla $=644$

Wednesday: 1050
Ratio of Vanilla: Chocolate $=3: 2$
Vanilla $=630$
47. If the ratio of Vanilla Cakes Sold on Thursday to Vanilla Cakes sold on Saturday is 3:4, Number of Chocolate Cakes Sold on Thursday is equal to Number of Chocolate on Saturday then Number of Chocolate Cakes sold on Saturday is equal to total number of Cakes sold on which day?
A. Monday
B. Tuesday
C. Wednesday
D. Thursday

Answer: A

## Explanation:

Thursday $=\mathrm{V} 1+\mathrm{C}=1218$
Saturday $=\mathrm{V} 2+\mathrm{C}=1302$
$V 2-V 1=84$
$\mathrm{V} 1: \mathrm{V} 2=3: 4$
$\mathrm{V} 1=252 \mathrm{~V} 2=336$

Then $\mathrm{C}=996=84 * 11.5$ =i.e.,
Total Cakes sold on Monday
48. If the average number of Vanilla Cakes Sold on Friday and Sunday are 858 and Number of Chocolate Cakes Sold on Sunday are 72 more than Number of Chocolate Cakes sold on Friday then Number of Chocolate Cakes sold on Friday is?
A. 482
B. 492
C. 498
D. 512

Answer: B

Explanation:

Friday $=1344=\mathrm{V} 1+\mathrm{C} 1$

Sunday $=1428=\mathrm{V} 2+\mathrm{C} 2$
Average $=\frac{(\mathrm{V} 1+\mathrm{V} 2)}{2}=858$ then $\mathrm{V} 1+\mathrm{V} 2=1716$
$2772=1716+C 1+C 2$
$C 1+C 2=1056$
$\mathrm{C} 2-\mathrm{C} 1=72$

C1 $=492=$ Friday Chocolate Cakes
49. Ratio of Vanilla Cakes Sold to Chocolate Cakes Sold is $46: 45$ on Tuesday then how many number of Vanilla Cakes are Sold on that day?
A. 540
B. 546
C. 552
D. 562

Answer: C
Explanation:
Cakes $=84 * 13=1092$
Vanilla $=\frac{1092 * 46}{91}$
50. If the ratio of Vanilla Cakes sold to Chocolate Cakes sold on Monday is $2: 1$ and the ratio of Selling Price of Vanilla Cake to Chocolate Cake is the 1:4, total amount earned by him on Monday is Rs. 9660 then what is the rate of One Vanilla Cake?
A. Rs 4
B. Rs 5
C. Rs 10
D. Rs 20

Answer: B

$644 R 1+322 R 2=9660$
$R 1=5$

## A. StayConnectedwithSPNotifier

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