Percentages

Percent means the result for every hundred.

If a number increases by 20% of it, it becomes 120% of itself. Similarly, if a number decreases by 20% of it, it becomes 80% of itself.

If a quantity is increased, then the percentage of increase = (increase / initial value) \* 100. Similarly if a quantity is decreased, then the percentage of decrease = (decrease / initial value)\*100.

**1. Percentage Increase/Decrease:** If the price of a commodity increases by R%, then the reduction in consumption so as not to increase the expenditure is:

|  |  |  |  |
| --- | --- | --- | --- |
| http://www.indiabix.com/_files/images/aptitude/1-sym-obracket-h1.gif | R | x 100 | http://www.indiabix.com/_files/images/aptitude/1-sym-cbracket-h1.gif% |
| (100 + R) |

If the price of a commodity decreases by R%, then the increase in consumption so as not to decrease the expenditure is:

|  |  |  |  |
| --- | --- | --- | --- |
| http://www.indiabix.com/_files/images/aptitude/1-sym-obracket-h1.gif | R | x 100 | http://www.indiabix.com/_files/images/aptitude/1-sym-cbracket-h1.gif% |
| (100 - R) |

**If a number is increased by 1/n times, it should be decreased by 1/(n+1) times to bring it back to the original value or vice versa.**

**3. Results on Population:**

Let the population of a town be P now and suppose it increases at the rate of R% per annum, then:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| i. Population after *n* years = P | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 1 + | R | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | n |
| 100 |

|  |  |
| --- | --- |
| ii. Population *n* years ago = | P |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 1 + | R | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | n | | 100 | |

**4. Results on Depreciation:**

Let the present value of a machine be P. Suppose it depreciates at the rate of R% per annum. Then:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| i. Value of the machine after *n* years = P | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 1 - | R | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | n |
| 100 |

|  |  |
| --- | --- |
| ii. Value of the machine *n* years ago = | P |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | http://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 1 - | R | http://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | n | | 100 | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| iii. If A is R% more than B, then B is less than A by | http://www.indiabix.com/_files/images/aptitude/1-sym-obracket-h1.gif | R | x 100 | http://www.indiabix.com/_files/images/aptitude/1-sym-cbracket-h1.gif%. |
| (100 + R) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| iv. If A is R% less than B, then B is more than A by | http://www.indiabix.com/_files/images/aptitude/1-sym-obracket-h1.gif | R | x 100 | http://www.indiabix.com/_files/images/aptitude/1-sym-cbracket-h1.gif%. |
| (100 - R) |

5. If a% and b% are two successive changes, then the overall change =

1. 32% of a number exceeds 12% of the same number by 80. What is the number?

A.300 B. 400 C. 500 D. 600

2. A student has to get 38% of marks to pass the examination. Kiran got 81 marks and failed by 14 marks. What is the maximum mark?

A. 250 B.300 C. 350 D. 400

3. In a school of 600 students, 40% are girls. 30% of boys and 50% of girls failed the exam. What % of the students in the schools passed the exam?

A. 56% B. 58% C. 60% D.62%

4. In an election, two candidates contested. A candidate got 38% of the votes polled and lost to his rival by 3600 votes. Find the total number of votes polled?

A. 12000 B. 15000 C. 18000 D. 21000

5. 60 litres of a mixture of milk and water contains 35% of water. If 10 litres of milk is added, what will be the percentage of water in the resultant mixture?

A. 30% B. 21% C. 33 1/3% D. 16 2/3%

6. The number of employees in an office is increased by 10% and by 20% in two successive years. If the present strength of the office is 792. What was the number of employees in that office two years ago?

A. 700 B. 600 C. 650 D. 480

7. In a factory, 20% of the cars are blue, 40% of the remaining are red, 66% of the remaining are white and the remaining 102 are green in color. What is the total number of cars in the factory?

A. 400 B. 600 C. 625 D. 675

8. If A is more than B by 20%, by what % B is less than A?

A. 16 2/3 B. 16 1/3 C. 17% D. 18%.

9. In a school, the number of boys is less than that of girls by 20%. By what percentage the number of girls is more than that of boys?

A. 20% B. 25% C. 40% D. 60%.

10. The side of a square is increased by 10%. What is the percentage increase in area?

A. 20% B. 21% C. 27% D. 28%

11. In a class, 44% of the students passed in English, 70% of the students passed in Telugu and 21% of the students passed in both the subjects. What is the percentage of the students failed in both the subjects?

A. 6% B. 8% C. 7% D. 11%

12. The salary of a person was first increased by 10% and later the same was reduced by 10%. What is the net change?

A. 1% Decrease B. 1% increase C. 11% increase D. Nil

13. Two students appeared at an examination. One of them secured 9 marks more than the other and his marks was 56% of the sum of their marks. What are the marks obtained by them?

A. 42, 33 B. 42, 36 C. 44, 33 D. 44, 36

14. If A = x% of y and B = y% of x, then which of the following is true?

A. A is greater than B B. A is smaller than B

C. Relationship between A and B cannot be determined. D. None of these

15. Rahul went to a shop and bought things worth Rs. 25, out of which 30 Paise went on sales tax on taxable purchases. If the tax rate was 6%, then what was the cost of the tax free items?

A. 3Rs. 15 B. Rs. 12.10 C. Rs. 19.70 D. Rs. 16.80