

Niscort Father Agnel School, Vaishali (2017-18)

Self learning worksheet

Class-VIII

Ch-8 Comparing Quantities

1. Find the ratio of the speed of a car 60 km/hr to the speed of a scooter 30 km/hr.
2. Find the ratio of 5 m to 10 km.
3. 76% of 50 students are good in English. How many students are not good in English?
4. A man got 10% increase in his salary. If his original salary was Rs 30,000, find his new salary.
5. Shalu bought a water cooler for Rs 1100 including a tax of 10%. Find the price of the water cooler before the tax was added.
6. If the cost price of 10 greeting cards is equal to the selling price of 8 greeting cards, find the gain or loss%.
7. Rishi bought a wrist watch for Rs 2200 and sold it for Rs 1980. Find his gain or loss%.
8. A shopkeeper offers his customers 10% discount and still makes a profit of 26%. What is the actual cost of an article marked Rs 280?
9. Harish sold a bicycle at 8% gain. Had it been sold for Rs 75 more, the gain would have been 14%. Find the cost price of the bicycle.
10. Shruti borrows Rs 12,000 at 10% per annum for 3 years at simple interest and Shalini borrows the same amount for the same period at 8% per annum compounded annually. Who pays more interest and by how much?
11. Rakesh bought a watch for Rs. 800 and sold it for Rs. 1000. Mukesh bought a car for Rs. 4,00,000 and sold it for Rs. 4,20,000. Who made a better sale, Rakesh or Mukesh?
12. Find the amount and compound interest on Rs 20,000 for 1.5 years at 10% per annum compounded half yearly. Would this interest be more than the interest he gets if it was compounded annually?
13. The sale price of an article including the sales tax is Rs 616. The rate of sales tax is 10%. If the shopkeeper has made a profit of 12% then find the cost price.
14. Sabena bought 16 dozen-ball pens and sold them at a loss equal to S.P of 8 ball pens. Find her loss%.
15. Rajan bought two buffaloes for Rs 30000. By selling one at a loss of 15% and other at a gain of 19%, he found that selling price of both buffaloes is the same. Find the C.P of each. Also find his overall gain or loss percent.
16. Find the compound interest on Rs14,000 at the rate of 12% per annum for 1 and 1/2 years when interest is compounded semiannually.
17. Rakesh bought a scooter for Rs 42,000. If its value decreases by 8% every year, find its value at the end of 2 years.
18. What will be the compound interest on Rs1000 at the rate of 8% per annum for 1 and 1/2 years when interest is compounded quarterly.

19. What percent of the total distance of 100km is 22km?
20. The marked price of a television is 25% more than the cost price. It is sold at a discount of 10%. If the marked price is Rs. 12,000, then find the cost price, selling price and the profit. What will be the percentage of profit?
21. Rina gets 94 marks in her exams. These are 47% of the total marks. Find the maximum number of marks.
22. Sachin bought a pair of Reebok shoes at a sale of 25%. If the amount he paid was Rs 2000, find the marked price.
23. In an election, there are a total of 60000 voters and there are two candidates, A and B. 60 % of the voters go for polls out of which 60 % vote for A. How many votes do B get?
24. There are 442 boy students in class X in all the section in Saint Xavier school. If 25% of the students are girls, find the total number of students in class X.
25. If the Principal is Rs50000 and 8% is the rate of interest per annum compound annually
- Find the interest earned in First year.
 - What is the principal for 2nd Year?
 - What is the interest earned in second year?
 - Is First year interest same as second year interest
 - What will be the total interest earned for 2 years if it was calculated as simple interest per annum?
26. An income is 20 % more than B. How much percent is B income less than A?
27. X Bought a X box at Rs 35000 and sold it to Y. Y in turns sold it to Z. Both X and Y made 20% profit. Which one of the following is true?
- X and Y earn the same profit
 - X earned more profit Y
 - X earned less profit then Y
 - Cannot be determined
28. The population of a city increased from 60000 to 62500. What is the increase percent?
29. At what rate percent per annum will Rs.640 amount to Rs. 774.50 in 2 years, interest being compounded annually?
30. The difference between the compound interest and simple interest on a certain sum of money at 10% per annum for 2 years is Rs. 500. Find the sum when the interest is compounded annually.
31. In how much time will Rs.5000 amount to Rs. 6655 at 10% p.a, interest compounded annually?
32. Kamala borrowed from Ratan a certain sum at a certain rate for two years simple interest. She lent this sum at the same rate to Hari for two years compound interest. At the end of two years she received Rs 210 as compound interest, but paid Rs 200 only as simple interest. Find the sum and the rate of interest.

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Ch-12 Exponents and powers

1. Evaluate:

(i) $(5/9)^{-2} \times (3/5)^{-3} \times (3/5)^0$

(ii) $(-3/5)^{-4} \times (-2/5)^2$

(iii) $(-2/3)^{-3} \times (-2/3)^{-2}$

(iv) $(2/5)^{-3}$

(v) $\{-3/8\}^{-3} \times (4/9)^{-2}$ is

(vi) $\{(4/-3)^{-3}\}^2$

(vii) $(3^{-1} + 4^{-1})^{-1} \div 5^{-1}$

(viii) $(1/2)^{-2} + (2/3)^{-2} + (3/4)^{-2}$

(ix) $\{(4/3)^{-1} - (1/4)^{-1}\}^{-1}$

(x) $[\{(-1/2)^2\}^{-2}]^{-1}$

2. Find the value of x for which $(7/12)^{-4} \times (7/12)^{3x} = (7/12)^5$

3. If $(2^{3x-1} + 10) \div 7 = 6$, then find the value of x.

4. Find the value of x for which $(5/3)^{-4} \times (5/3)^{-5} = (5/3)^{3x}$

5. Find the value of x for which $(4/9)^4 \times (4/9)^{-7} = (4/9)^{2x-1}$

6. By what number should $(-6)^{-1}$ be multiplied so that the product becomes 9^{-1} ?

7. By what number should $(-2/3)^{-3}$ be divided so that the quotient may be $(4/27)^{-2}$?

8. If $5^{2x+1} \div 25 = 125$, find the value of x.

9. Write the following in standard form.

a) 0.000021

b) 41860000000

c) 0.0000000000468

d) 0.345

e) 37240000000000

f) 76100000000

g) 3910.28×10^4

11. Express the following numbers in their usual form:

a) 3.05×10^{-6}

b) 4.5×10^4

c) 3.1563×10^6

12. Expand using exponents:-

a) 1526.26

b) 1026.13

c) 3456.234

d) 2016.123

13. In the year 2000, Los Angeles, CA had a population of about 3,700,000 people. What is this number in scientific notation?

14. Simplify-a) $[(8 + 6)^2 \div 7]^3 \div 28$

b) $\frac{7.1 \times 10^{-2}}{3.6 \times 10^6}$

c) $4^2 - (-4) - (3^3 - 20)$

15. Find the value of x for $6x^2 = \frac{3}{32}$

16. The wavelength of light is 0.000065 meters. What is this value in scientific notation?

17. Simplify and express with positive exponent:-

$$\frac{(3^{-2})^2 \times (25)^{-3} \times (t^{-3})^2}{(243)^{-2} \times (125)^{-2} \times (t^{-4})^3}$$

18. Solve for x:-

$$(49/225)^{-x} \times \sqrt[2]{\left(\frac{15}{7}\right)^x} \div (343/3375)^{-1} = 1$$