

## **MATHS**

# **BOOKS - VGS PUBLICATION-BRILLIANT**

# COMPARING QUANTITIES USING PROPORTION

Exercise

1. Find the compound ratios of the following

:3:4 and 2:3



2. Find the compound ratios of the following:4:5 and 4:5.



**3.** Find the compound ratios of the following:5:7 and 2:9



**4.** Give examples for compound ratio from daily life.



**Watch Video Solution** 

**5.** Two times a number is 100% Increase in the number. If we take half the number what would be the decrease in percent?



**6.** By what percent is ₹2000 less than ₹2400? Is it the same as the percent by which ₹2400 is more than ₹2000?



**Watch Video Solution** 

**7.** Find the ratio of the following:Smita works in office for 6 hours and Kajal works for 8 hours in her office. Find the ratio of their working hours.



**8.** Find the ratio of the following:One pot contains 8 litres of milk while other contains 750 milliliter.



**Watch Video Solution** 

**9.** Find the ratio of speed of a cycle 15 km per hour to the speed of scooter 30km per hour-



**10.** If the compound ratio of 5:8 and 3:7 is 45:

x. Find the value of x.



**Watch Video Solution** 

11. If the compound ratio of 7:5 and 8:x is

84:60, Find x.



**Watch Video Solution** 

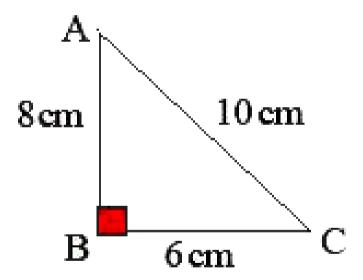
12. The compound ratio of 3: 4 and the Inverse ratio of 4:5 is 45: x. Find x.

**13.** In primary school there shall be 3 teachers to 60 students. If there are 400 students enrolled in the school, how many teachers should be there in the school in the same ratio?



**14.** In the given figure, ABC is a triangle. Write all possible ratios by taking measures of sides pair wise.

(Hint: Ratio of AB:BC=8:6)





**15.** If 9 out of 24 students scored below 75% marks in a test. Find the ratio of student scored below. 75% marks to. the student scored 75% and above marks.



**Watch Video Solution** 

**16.** Find the ratio of number of vowels in the word 'MISSISSIPPI' to the number of consonants in the simplest form.



**17.** Rajendra and Rehana own a business. Rehana receives 25% of the profit in each month. If Rehana received ₹ 2080 in particular month, what is the total profit in that month?



**Watch Video Solution** 

**18.** In triangle ABC, AB= 2.2 cm, BC =1.5 cm and AC= 2.3 cm. In triangle XYZ, XY=4.4 cm, YZ=3 cm and XZ =4.6 cm, Find the ratio AB: XY, BC: YZ, AC: XZ Are the lengths of corresponding sides

of A ABC and XYZ are in proportion? [Hint: Any two triangles are said to be in proportion, if their corresponding sides are in the same ratiol



**Watch Video Solution** 

19. Madhuri went to a super market. The price, changes are as follows. The price of rice reduced by 5% jam and fruits reduced by 8% and oil and dal. Increased by 10%. Help Madhuri to find the changed prices in the

given table. item original price rice rs. 30 jam rs.100 apples rs. 280 oil rs.120 dal rs.80



**Watch Video Solution** 

**20.** There were 2075 members enrolled in the club during last year. This year enrolment is decreased by 4%. Find the decrease in enrolment.



**21.** There were 2075 members enrolled in the club during last year. This year enrolment is decreased by 4%. How many members are enrolled during this year?



**Watch Video Solution** 

**22.** A farmer obtained a yielding of 1720 bags of cotton last year. This year she expects her crop to be 20% more. How many bags of cotton does she expect this year?



Watch Video Solution

23. Points P and Q are both in the line. segment AB and on the same side of its midpoint. P divides AB in the ratio 2: 3, and Q divides AB in the ratio.3:4. If PQ =2, then find the length the line segment AB.



**24.** In the year 2012, it was estimated that there were 36.4 crore internet users

worldwide. In the next ten years, that number will be increased by 125 %. Estimate the number of internet users worldwide in 2022.



**Watch Video Solution** 

**25.** The cost of a pair of shoes is 1000. The GST charged was 5%. Find the bill amount.



26. A owner increases the rent of his house by 5% at the end of each year. If currently its rent is ₹2500 per month, how much will be the rent after 2 years?



**Watch Video Solution** 

**27.** On Monday, the value of a company's shares was 7.50. The price increased by 6% on Tuesday, decreased by 1.5% on Wednesday, and

decreased by 2% on Thursday Find the value of each share when trade opened on Friday.



**Watch Video Solution** 

28. With most of the Xerox machines, you can reduce or enlarge your original by entering a percentage for the copy.Reshma wanted to enlarge a 2 cm by 4 cm drawing. She set the Xerox machine for 150% and copied her drawing .What will be the dimensions of the copy of the drawing be?



29. The printed price of a book is ₹150. And discount is 15%, Flind the actual amount to be paid.



**30.** The marked price of a gift item is ₹176 and sold it for ₹165. Find the discount percent.



**31.** A shop keeper purchased 200 bulbs for ₹10 each. However 5 bulbs were fused and put thein Into scrap. The remaining were sold at ₹12 each. Find the gain or loss percent.



**Watch Video Solution** 

**32.** A table was sold for ₹2,142 at a gain of f 5%.

At what price should it be sold to gain 10%.



**33.** Gopl sold a watch to Ibrahim at 12% gain and Ibrahim sold it to John at a loss of 5%. If John paid ₹1,330, then find how much did Gopi sold it?



Watch Video Solution

**34.** Madhu and Kavitha purchased a new house for ₹3,20,000. Due to some economic problems they sold the house for ₹2,80,000. Find (a) the loss incurred (b) the loss percentage.

**35.** A pre-owned car show room owner bought a second hand car for ₹1,50,000. He spent ₹20,000 on repairs and painting, then sold it for ₹2,00,000, Find whether he gets profit or loss. If so, what percent?



**36.** Lalitha took a parcel from a hotel to celebrate her birthday with her friends. It was billed with ₹1,450, including 5% VAT. Lalitha asked for some discount, the hotel owner gave 8% discount on the bill amount. Now find the actual amount that Lalitha has to pay to the hotel owner.



**37.** A cell phone Company fixed the price of a cellphone as 4500. A dealer purchased a cell phone on which he paid 12% GST additionally. How much did the dealer paid is GST? What is the purchase price of Cell phone?



**Watch Video Solution** 

**38.** ASuper-Bazar prices an item in rupees and paise so that when 4% sales tax is added, no rounding is necessary because the result is

exactly in 'n' rupees, where 'n' is a positive integer. Find the smallest value of 'n'.



**Watch Video Solution** 

**39.** Sudhakar borrows ₹15000 from a bank to renovate his house. He borrows the money at 9% p.a. simple Interest over 8 years. What are his monthly repayments?



**40.** A TV was bought at a price of ₹21000. After 1 year the value of the TV was depreciated by 5% (Depreciation means reduction of the value due to use and age of the item), Find the value of the TV after 1 year.



**Watch Video Solution** 

**41.** Find the amount and the compound interest on ₹8000 at 5% per annum, for 2 years compounded annually.



Watch Video Solution

**42.** Find the amount and the compound interest on ₹6500 for 2 years, compounded annually, the rate of Interest being 5% per annum during the first year and 6% per annum during the second year.



**43.** Prathibha borrows ₹47000 from a finance company to buy her first car. The rate of

simple interest is 17% and she borrows the money over a 5 year period. Find How much amount Prathibha should repay the finance company at the end of five years.



# Watch Video Solution

**44.** Prathibha borrows ₹47000 from a finance company to buy her first car. The rate of simple interest is 17% and she borrows the money over a 5 year period. Find Her equal monthly repayments.

**45.** The population of Hyderabad was 68,09,000 in the year 2011. If it increases at the rate of 4.7% per annum. What will be the population at the end of the year 2015?



**46.** Find compound interest paid when a sum of 10000 is invested for 1 year and 3 months at  $8\frac{1}{2}$  % per annum compounded annually.

**47.** Arif took a loan of ₹ 80,000 from a bank. If the rate of Interest is 10% per annum, find the difference in amounts he would be paying after  $1\frac{1}{2}$  years. If the interest is compounded annually.



**48.** Arif took a loan of ₹ 80,000 from a bank. If the rate of Interest is 10% per annum, find the difference in amounts he would be paying after  $1\frac{1}{2}$  years. If the interest is compounded half yearly.



Watch Video Solution

**49.** I borrowed ₹12000 from Prasad at 6% per annum simple interest for 2 years. Had I borrowed this sum at 6% per NA annum

compounded annually, what extra amount would I have to pay?



Watch Video Solution

**50.** In a laboratory the count of bacteria in a certain, experiment was increasing at the rate of 2.5% per hour. Find the bacteria at the end of 2 hours if the count was initially 5,06,000.



**51.** Kamala borrowed ₹26400 from a bank to buy a scooter at a rate of 15% per annum compounded yearly. What amount will she pay at the end of 2 years and 4 months to clear the loan?



Watch Video Solution

**52.** Bharathi borrows an amount of ₹12500 at 12% per annum for 3 years at a simple interest and Madhuri borrows the same amount for

the same time period at 10% per annum, compounded, annually. Who pays more interest and by how much?



**Watch Video Solution** 

**53.** Machinery worth ₹10000 depreciated by 5%. Find its value after 1 year.



**54.** Find the population of a city after 2 years which is at present 12 lakhs, if the rate of increase is 4%.



**Watch Video Solution** 

**55.** Calculate compound interest on ₹1000 over a period of 1 year at 10% per annum, If Interest is compounded quarterly.



**56.** Which of the following is a golden ratio?

A. 1.0423611111111

B. 1.618:1

C. 1.5:1

D. 0.0430555555556

#### **Answer:**



**Watch Video Solution** 

57. The compound ratio of a: b and c:d is

- A. ab:cd
- B. bc:bd
- C. ac:bd
- D. ad:bc

### Answer:



**Watch Video Solution** 

**58.** Find the compound ratios of the following:5:7 and 2:9

A. 1.884722222222

B. 0.46041666666667

C. 2.631944444444

D. 0.61458333333333

# **Answer:**



**Watch Video Solution** 

**59.** 30% of 40 =

- B. 7
- C. 12
- D. 48



Watch Video Solution

**60.** Increase in percent of 2 times of a number

is

- B. 1
- C. 3
- D. 0.5



**Watch Video Solution** 

**61.** The cost of one pair of shoes is 550, if 10% discount is allowed on, then the S.P. of shoes is

- B. 495
- C. 485
- D. 475



**Watch Video Solution** 

**62.** The marked price of a cycle is 3600 and it

S.P. is 3312 then discount% is

A. 0.08

- B. 0.09
- C. 0.06
- D. 0.07



**Watch Video Solution** 

**63.** The cost of one pair of clothes is 450. If 6% of sales tax is allowed on it then the bill has to pay

B. 477

C. 467

D. 423

# Answer:



Watch Video Solution

**64.** In A = 
$$P\left(1 + \frac{R}{100}\right)^n$$
, R stands for

A. Principal

- B. Time
- C. C.I
- D. Rate of interest



- **65.** Selling Price =\_\_\_\_\_
  - A. M.P discount
  - B. Discount M.P

C. M.P - Profit

D. None

#### **Answer:**



**Watch Video Solution** 

**66.** The marked price of a celling fan in ₹1600 and the shop keeper allows a discount of 6% on it. Find its selling price.

B. 1105

C. 504

D. 1504

# Answer:



**Watch Video Solution** 

# **67.** Profit Percentage=\_\_\_\_\_

A. 
$$rac{Profit}{loss} imes 100$$

B. 
$$\frac{Frojit}{CP} imes 100$$

C. 
$$\frac{Profit}{100}$$

D. None

# **Answer:**



Watch Video Solution

**68.** If two cycles are sold.on equal-price. He get 10% profit on the first and 10% loss on the second then his overall profit or loss percent=\_\_\_\_\_

- A. Loss percentage 1%
- B. Profit percentage 2%.
- C. Loss percentage 3%
- D. None



**Watch Video Solution** 

**69.** Formula for simple interest is I\_\_\_\_\_\_

A.  $\frac{100}{PTR}$ 

B. 
$$\frac{PT^2R}{100}$$

$$\mathsf{C.} \; \frac{PTR}{100}$$

D. 
$$\frac{P}{100T}$$



**70.** S.I on ₹500 at the rate of 5% of 2 year

A. 16

is\_\_\_\_\_

- B. 50
- C. 20
- D. 90



Watch Video Solution

# **71.** Compound interest =\_\_\_\_\_

A. 
$$Pigg(1+rac{R}{100}igg)^3-1$$

$$\mathsf{B.}\,P\bigg(1-\frac{R}{100}\bigg)^n-1$$

C. 
$$Pigg(1+rac{R}{100}igg)$$
D.  $Pigg(1+rac{R}{100}igg)^n-P$ 



**Watch Video Solution** 

**72.** The number of time periods for compounded every 6 months, 
$$for 2\frac{1}{2}$$
 years is \_\_\_\_\_

B. 6

C. 5

D. 10

### **Answer:**



Watch Video Solution

**73.** The CI on ₹5000 at the rate of 8% for 2 years is\_\_\_\_\_

- B. 238
- C. 161
- D. 169



**Watch Video Solution** 

**74.** The population of a village is 6250. It is found that the rate of increase in population is 8% per annum. Find the population after 2 years.

- A. 7920
- B. 7190
- C. 7490
- D. 7290



**Watch Video Solution** 

**75.** P is the principle, R% is rate and time period is T, Simple Interest is S and Compound

Interest is then observe the following cases.i)

C > S ii)C=S iii)C < S

A. Only i is true

B. Either (i)or (ii) is true

C. Either (ii) or (iii) is true

D. Only (ii) is true

**Answer:** 



76. The MP of an item is ₹80 and it sold is for

₹76 then the discount percentage Is\_\_\_

- A. 0.06
- B. 0.05
- C. 0.15
- D. 0.2

#### **Answer:**



**77.** Navya bought a scooter for ₹36,450 and paid a tax of 9% then how much amount she paid in total?

- A. 19370
- B. 39170.5
- C. 390470
- D. 39730.5

#### **Answer:**



**78.** After allowing a discount of 20% the cost of a shirt is ₹1,120 then the MP is

- A. 1400
- B. 1410
- C. 2310
- D. 1443

#### **Answer:**



**79.** The cost of a T.V with VAT 5% is ₹ 26,250 then the cost of that T.V is\_\_\_\_

- A. 21000
- B. 52000
- C. 25000
- D. 16000

#### **Answer:**



**80.** 40% of (100 - 20% of 300)=\_\_\_\_

A. 19

B. 10

C. 26

D. 16

# **Answer:**



81. The new salary of a person after increasing

10% is ₹ 1,54,000 then the old salary was \_\_\_\_

- A. 170001
- B. 190000
- C. 130000
- D. 140000

#### **Answer:**



**82.** On a Monday 845 people visited a park and. on Tuesday 169 people visited then how much decrease percentage is observed in visitors?

- A. 0.2
- B. 0.3
- C. 0.7
- D. 0.8

#### **Answer:**



**83.** 3:4=\_\_\_\_%

**A.** 70

B. 75

C. 65

D. 80

# **Answer:**



A. 0.666666666

B. 0.12638888888889

C. 0.044444444444444

D. 0.16736111111111

# **Answer:**



**Watch Video Solution** 

**85.** 72% of 25 students got good marks in Mathematics, then how many people did not score good marks?

- A. 13
- B. 11
- C. 10
  - D. 7



**Watch Video Solution** 

86. After spending 75% in his total money Ravi was left with Rs 600/. Then how-much money he had originally?

- A. 800
- B. 1600
- C. 2400
- D. 1200



**Watch Video Solution** 

**87.** P=₹10,000, R=4%, n=2 then A=₹\_\_\_\_

B. 11816

C. 10861

D. 12861

# Answer:



**Watch Video Solution** 

**88.** P=₹12,000, R= 6% T = 2 years then I =?

A. 1320

B. 3120

C. 1220

D. 1440

#### **Answer:**



**Watch Video Solution** 

**89.** The cost of a scooter is ₹ 42,000 and the depreciation value for every year is 8% thien the value of scooter after 1 year is\_\_\_\_

B. 38640

C. 39469

D. 18460

### **Answer:**



Watch Video Solution

**90.** Raju took some amount from a bank at  $10\frac{1}{2}$  % per 1year. He paid ₹1863.75 as interest after  $2\frac{1}{2}$  years.then how much amount was initially taken?

- A. 6500
- B. 1600
- C. 6800
- D. 7100



**Watch Video Solution** 

**91.** 'On certain amount simple interest is  $\frac{16}{25}$ th part of the amount taken then the time and rate of interest is \_\_\_\_ (Numerically same)

- A. 8
- B. 9
- C. 10
- D. 3



**Watch Video Solution** 

**92.** On a certain amount at  $\frac{12_1}{2}\%$  rate for 4 years it becomes ₹ 2437.50 then the amount is

- A. 1225
- B. 1025
- C. 1625
- D. 1175



**Watch Video Solution** 

**93.** On ₹5000 at 12% per 1 year the interest for

3 years is\_\_\_\_\_

- A. 1200
- B. 1800
- C. 1000
- D. None



**Watch Video Solution** 

**94.** On which rate₹ 500 will become ₹605 in 3 years?

- A. 0.07
- B. 0.06
- C. 0.12
- D. 0.09

## **Answer:**



**Watch Video Solution** 

**95.** 12.5%=\_\_\_\_\_

A. 0.125

B. 0.044444444444444

C. 0.3340277777778

D. 0.0472222222222

### Answer:



Watch Video Solution

**96.** 111:125=\_\_\_\_

A. 0.888

B. 0.6

C. 0.12

D. 0.69

## **Answer:**



**Watch Video Solution** 

**97.** How much percentage is 16 min 40 m?

A. 0.16

B. 0.4

C. 0.2

D. 0.18

### **Answer:**



Watch Video Solution

**98.** 9% of ₹ 700 is\_\_\_\_\_

A. 20

B. 36

C. 60

D. 63

#### **Answer:**



Watch Video Solution

99.8% value of a number is 6 then the number

is\_\_\_\_\_

A. 75

B. 60

C. 85

D. 65

#### **Answer:**



# Watch Video Solution

**100.** 
$$3\frac{1}{3}$$
 % of 90 km=\_\_\_\_

A. 10

B. 16

C. 13

D. None

#### **Answer:**



**101.** P=₹ 2500, T=2 years 6 months, R=6% then A

=\_\_\_\_

A. 1975

B. 2175

C. 2875

D. 8275

**Answer:** 



Watch Video Solution

**102.** At 12% rate for 3 years how much amount will become ₹ 4590?

A. 3375

B. 2375

C. 1475

D. 1290

**Answer:** 



103. One item was bought for ₹400 and sold it

for ₹336 then the loss percentage is\_\_\_\_\_

- A. 0.13
- B. 0.12
- C. 0.15
- D. 0.16

#### **Answer:**



**104.** If we increase a number by 20% it becomes 42 then the number is\_\_\_\_\_

- **A.** 5
- B. 16
- C. 10
- D. None

#### **Answer:**



## **Example**

1. A cycle is marked at ₹3600 and sold for ₹3312. What is the discount and discount percentage?



**Watch Video Solution** 

2. The marked price of a celling fan in ₹1600 and the shop keeper allows a discount of 6% on it. Find its selling price.



3. Neelima went to a shop to buy a dress.
Marked price of the dress is ₹1000. Shop
owner gave a discount of 20% and then 5 %.
Find the single discount equivalent to these
two successive discounts.



**Watch Video Solution** 

**4.** Preethi went to a shop to buy a dress. Its marked price is ₹ 2500. Shop owner gave 5%

discount on it. On further insistence, he gave 3% more discount. What will be the final discount she obtained? Will it be equal to a single discount of 8% Think, discuss with your friends and write it in your notebook.



**Watch Video Solution** 

5. What happens if cost price is selling price?

Do we get any such situations in our daily life?

It is easy to find profit % or loss % in the above situations. But it will be more

meaningful if we express them in percentages.

Profit % is an example of increase percent of cost price and loss % is an example of decrease percent of cost price.



## **Watch Video Solution**

**6.** Radhika deals with second-hand goods. She bought a second hand refrigerator for ₹ 5000. She spends ₹100 on transportation and 500 on its repair. She sells the refrigerator for ₹7000.Find the total cost price of the refrigerator.



**Watch Video Solution** 

7. Radhika deals with second-hand goods. She bought a second hand refrigerator for ₹ 5000. She spends ₹100 on transportation and 500 on its repair. She sells the refrigerator for ₹7000.Find profit or loss percent.



**8.** Vinay bought a flat for ₹4,50,000. He spent ₹10,000 on its paintings and repair. Then he sold it for ₹4,25,500. Find his gain or loss and also its percent.



**Watch Video Solution** 

9. Venkanna purchased 50 dozen bananas for ₹1250. He incurred. transportation charges of ₹250. He could not sell five dozen bananas as they were spoiled. He sold the remaining

banarias at ₹35 for each dozen. Will he get a profit or a loss? Find profit or loss percent.



**Watch Video Solution** 

**10.** Malik sells two tables for 3000 each. He gains 20% on one table and on the other he loses 20%. Find his gain or loss percent on the whole transaction.



11. A shop keeper sold two TV sets at ₹9,900 each. He sold one at a profit of 10% and the other at a loss of 10%. On the whole whether he gets proft or lons? If so what is its percentage?



Watch Video Solution

**12.** The cost of a pair of shoes is ₹450. The sales tax charged was 6%. Find the bill amount.



## Watch Video Solution

13. A sum of ₹2500 is borrowed at a rate of 12% per annum for 3 years. Find the simple interest on this sum and also the amount to be paid at the end of 3 years.



**Watch Video Solution** 

14. What will be the amount and compound interest, if ₹5000 is invested at 8% per annum2 years ?

**15.** How much compound interest is earned by investing ₹20000 for 6 years at 5% per annum compounded annually?



**Watch Video Solution** 

**16.** Find compound interest on ₹12600 for 2 years at 10% per annum compounded annually.

**17.** Calculate compound interest on ₹1000 over a period of 1 year at 10% per annum if interest is compounded half yearly?



**Watch Video Solution** 

**18.** Find the number of conversion times the interest is compounded and rate for each A sum taken for  $1\frac{1}{2}$  years at 8% per annum is compounded half yearly.

**19.** Find the number of conversion times the Interest is compounded and rate for each:A sum taken for 2 years at 4% per annum is compounded half yearly.



**20.** What will happen if interest is compounded quarterly? How many conversion

periods will be there? What about the quarter year rate-how much will it be of the annual rate? Discuss with your friends.



Watch Video Solution

**21.** What amount is to be repaid on a loan of  $\stackrel{?}{=}$ 12000 for  $1\frac{1}{2}$  year at 10% per annum if interest is compounded half yearly.



**22.** Yadalah for his family needs borrowed ₹5120 at 12% per annum compounded annually. How much amount he has to pay to clear the debt at the end of two year nine months? Also find total how much Interest he has paid?



**Watch Video Solution** 

**23.** The population of a village is 6250. It is found that the rate of increase in population

is 8% per annum. Find the population after 2 years.



Watch Video Solution

24. Arubber ball is dropped from a certain height. It is found to rebounce only 90% of its previous height. If it is dropped from the top of a 25m tall. building, to what height would it raise after bouncing on the ground two times.

