



# MATHS

# **BOOKS - PEARSON IIT JEE FOUNDATION**

# PERCENTAGES AND THEIR APPLICATIONS



**1.** Express 20~% as a fraction.

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**2.** Express 35 % as a decimal.



**3.** Express 1/2 as per cent.

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**4.** Find 40~% of 60.

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5. Represent the following decimals as percentages.

(i) 2.30 (ii) 0.85

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6. Represent the following percentages as fractions.

(i) 125 % (*ii*) 2.5 %

7. Represent the following fractions as percentages.

(i) 
$$\frac{3}{5}$$
 (*ii*)  $\frac{5}{3}$ 

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**8.** Banti has 50 chocolates with him, he are 60~% of those in a weak. Find the number of chocolates left with him.

A. 30

 $\mathsf{B.}\,20$ 

 $\mathsf{C}.\,50$ 

D. 60

#### Answer: B

**9.** Chanti distributed  $\frac{3}{4}th$  of his birthday cake to his friends. Find the percentage of the cake distributed to his friends.



**10.** The cost price of an article is Rs. 450. It is sold for Rs. 495. Find the profit percentage.

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11. A book is sold at a profit of  $20\,\%$  , If its cost price is Rs. 20, then find

its selling price.



12. A shopleeper an article for Rs. 280. If its cost price is Rs. 300, then find

his loss percentage.



13. The cost price of an article is Rs. 500. The article is marked as Rs. 700. If the shopkeeper sold it at a discount of 30%, then find the profit or loss percentage.

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14. Principal =Rs. 25000. Amount after 2 yeaRs. is Rs. 30000. Find the rate

of interest per annum.

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15. How much simple interest is to be paid on a loan of Rs.20000 at 18~%

per annum for a period of 3 yeaRs.?

16. The simple inteRs.et on a sum of Rs. 12000 is Rs. 1440. Find the
amount after 5 yeaRs
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<b>17.</b> Mr Abhishek paid Rs.360 as an interest for 8 months at $18~\%$ p.a. Find
the principal value of the loan taken by him.
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Very Short Answer Type Questions
1 5% of 500-
<b>1.</b> 5 % 01 500
Vatch Video Solution
$2.75^{0/}$ of 1-
<b>2.</b> <i>1</i> <b>3</b> /0 <b>0 1 1 =</b>
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<b>3.</b> `(1)/(5) of x is% of x.
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<b>4.</b> 0.25 of x is equal to% of x.
<b>Vatch Video Solution</b>
<b>5.</b> 60% is equal to
<b>Vatch Video Solution</b>
<b>6.</b> Which of the following is equal to $40~\%$ of x?

A. 4x

 $\mathsf{B.}\,0.04x$ 

$$\mathsf{C}.\,\frac{2}{5}x$$

D. None of these

Answer: C



**7.** Equivalent fraction to 110 % is\_\_\_\_\_.

A. 
$$\frac{12}{5}$$
  
B.  $\frac{6}{5}$   
C.  $\frac{11}{10}$   
D.  $\frac{8}{15}$ 

## Answer: C

**8.** 100 % of x is equal to \_ \_\_ \_\_ .

A. 100*x* 

 $\mathsf{B.}\,0.1x$ 

 $\mathsf{C.}\,0.01x$ 

 $\mathsf{D}.\,x$ 

#### Answer: D

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**9.** 15 % of 50 is equal to \_ \_ \_ \_ \_ \_ \_.

A. 50 % of 30

B.1005 of 30

C. 7.5 % of 25

 $\mathsf{D.}\,100~\% \quad \mathrm{of} \quad 7.5$ 

### Answer: D



**10.** 10 % of 20 % of 100 is equal to \_

A. 30% of 100

**B.** 2 % of 100

C. 15 % of 100

D. 200 % of 100

Answer: B

# 11. Match the following Column A to Column B

-	Column			Colum	
(a)	45%	()	(p)	3	
(Ь)	75 <b>%</b>	()	(q)	2 9	
(c)	125%	()	(r)	$\frac{3}{4}$	
(d)	150%	()	(8)	4 5 4	

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12. If SP > CP, then the difference between the selling price and the

cost price is \_\_\_\_\_.



13. If the selling price is less than cost price, then there is a \_\_\_\_\_ in

this transaction.





17. Which of the following is true?

A. 10~% profit on cost price of Rs.450 is Rs.50.

B. If loss % on the cost price of Rs.400 is 25~% , then the selling price

is Rs.300.

C. Selling price - Loss = Cost price

D. Profit - Cost price = Selling price

#### Answer: B

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**18.** The percentage of loss is calculated on the \_\_\_\_\_.

A. Selling price

B. Cost price

C. Marked price

D. None of these

Answer: B



**19.** Discount=\_\_\_\_.

A. Cost price + Selling price

B. Selling price - Marked price

C. Marked price - Cost price

D. Marked price - Selling price

#### Answer: D

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20. The cost price of a car is Rs.6,00,000. The car is sold for Rs.5,40,000.

Which of the following is true about this transaction?

A. 10~%~ loss

B. 10~% profit

C. 6% profit

D. 6% loss

Answer: A

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**21.** If an article is sold for Rs.150 at a loss of Rs.50, then which of the following is true?

A. 20~% loss

 $\mathrm{B.}\,10~\%~\mathrm{loss}$ 

 $\mathrm{C.}\,25\,\%\,\,\mathrm{loss}$ 

 $\mathrm{D.}\:50\:\%$  loss

Answer: C

## 22. Match the following Column A to Column B

	Column A			Column B
(a)	CP = ₹200, SP = ₹210	()	(p)	5% profit
(b)	SP = ₹500, CP = ₹400	()	(q)	10% profit
(c)	CP = ₹700, SP = ₹770	()	(r)	20% profit
(d)	CP = ₹800, SP = ₹960	()	(s)	25% profit

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23. Amount=\_\_\_\_+ Interest.

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**24.** The money taken as loan is called \_\_\_\_\_.

<b>25.</b> The money to be paid for using otheRs. money is called
<b>Watch Video Solution</b>
<b>26.</b> The money poid to the money lender which includes the interest and
the principal is called
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<b>27.</b> The simple interest on Rs.1000 at $10~\%$ p.a. for 10 yeaRs. is
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<b>28.</b> If `I=(PTR)/(100)" then "T=
A. $\frac{PT}{100}$

C. 
$$\frac{PR}{100I}$$
  
D. 
$$\frac{100I}{PR}$$

Answer: D

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<b>29.</b> Interest on Rs.500 at $12~\%$ p.a. for 1 year is
A. 50
B. 60
C. 70
D. 80
Answer: B
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**30.** Interest on a certain sum is Rs. 456 and the amount is Rs.2988. The

principal is Rs.\_\_\_\_\_.

A. 2532

B. 2522

C. 3444

D. 2352

#### Answer: A

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31. A sum of Rs.4700 is doubled in 6 yeaRs. under simple interest at a

certain rate of interest. The interest is Rs.\_\_\_\_\_.

A. 2350

B. 4700

C. 9400

D. Cannote be determined

#### Answer: B

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**32.** The simple interest on Rs.550 at the rate of 5% p.a. for 2 yeaRs. is

A. Rs. 55

\_\_\_\_\_

B. Rs. 27.50

C. Rs. 125

D. Rs. 12.50

Answer: A



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## Short Answer Type Questions

**1.** Find the values of  $72~\%\,$  of 250 and  $37.5~\%\,$  of 800.

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**2.** Find the value 62~% of 19+38~% of 19.

**3.** Convent 
$$\frac{12}{15}$$
 and  $4\frac{2}{3}$  into percentages.

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4. Express (i) 0.05 (ii) 5.0 into percentages.

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5. If  $10~\%\,$  of a number x is 25, then find the value of  $20~\%\,$  of x.

**O** Watch Video Solution

**6.** If 
$$\frac{3}{5}$$
 of a number 'R' is equal to 30, then find  $40\%$  of R.

7. If 20~%~ of x+40~%~ of  $rac{x}{2}+20~\%~$  of 3x=100, then find the value of



х.

**8.** The area of a square sheet is 250 sq. cm. If one-fourth of the sheet is painted red, then half of the sheet is painted green and the remaining is painted white. Find the percentage of the area painted in white.

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9. In a tray. There are 240 eggs. Raju sold 24 eggs from it and he used 12

eggs for himself. Find the percentage of remaining eggs in the tray.



**10.** Saritha added 0.5 liter of water to 2 litres of pure milk. Find the percentage of pure milk in the solution.



**11.** CP=Rs. 900 and Loss = Rs. 220. Find the selling price and the percentage of loss.

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12. CP = Rs. 800, MP = Rs. 1000 and SP = Rs. 900. Find the percentage of (i)

discount and (ii) profit.



13. The percentage of profit made on selling an article is 12~% . If the cost

price of the article is Rs. 1200, then find the profit.



**14.** The loss incurred on selling an article for Rs. 720 is Rs. 360. Find the loss percentage.

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**15.** Mr Surya and Mr Karthi got 15% and 25% profits respectively in their business. If their investments are Rs. 20 crores and Rs. 12 crores then who got more profit in rupees?

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**16.** A fruit seller purchased 20 kg of grapes for Rs. 400. If he sells the graphs at a rate of Rs. 50 per kg, then find his profit percentage.

17. Mr Akhil sold his bike for Rs. 42000. Its cost price was Rs. 60000. Find

his loss and the loss percentage.

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**18.** Mr Tarak purchased two horses for Rs. 7,50,000. He sold one horse for Rs. 4,00,000 and the other for Rs. 5,00,000. Find his profit and the profit

percent- age on selling both the horses.

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19. P= Rs. 6000, A= Rs. 6660 and the time period is 1 year. Find the interest

and the rate of interest per annum.



20. A= Rs. 7920, I= Rs. 720 and, T = 2 years. Find the principal and rate of

interest.

**21.** P=12000. Rate 12% p.a., T=12 months. Find the interest and the amount.

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**22.** Rate = 15 % p.a., P = Rs. 70000, A = Rs. 1,01,500. Find the time period.

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23. In how many years, a certain sum becomes tripe itself at 12~%~ p.a.?



**24.** (a) A certain sum becomes double in 3 years, find the rate of interest.

(b) Find the simple interest on Rs. 8900 for  $2\frac{1}{2}$  years at the rate of 18~%

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**25.** The population of a city increases every year 8% over its previous year. If the population of the city at the beginning of the year 2015 was 15,00,000. What would be the population of the city at the beginning of the year 2016?

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**26.** Mr Crazyarala took a loan of Rs. 10,000 at the rate of 12% p.a. simple interest and lent this money to is neighbour at 18% simple interest for 2 years. If he cleared the loan in two years, then find his profit in this transaction.

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**Concept Application** 

**1.** In a toy shop there are 500 balls of which 125 are blue, 150 are red the remaining are yel-low. What percentage of the balls in the shop are yellow?

A. 25~%

 $\mathsf{B.}\,30~\%$ 

 $\mathsf{C.}\,45~\%$ 

D. 40~%

#### Answer: C

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**2.** An article is sold at a discount of 25 %. Find the marked price of the article if its selling price is Rs. 1200.

A. Rs. 1600

B. Rs. 900

C. Rs. 1425

 $D.\,1500$ 

Answer: A

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**3.** If CP : SP : MP = 2 : 3 : 4, then which of the fol=lowing true?

- (A) Profit percentage = 50~%
- (B) Discount percentage =25~%

A. Only (A)

B. Only (B)

C. Neither (A) nor (B)

D. Both (A) and (B)

Answer: D



**4.** If a sum doubles in four years at the rate of R~%~ per annum simple

interest, then  $3R = \_ \_\_\_\_\_\_\_\_$ .

A. 30

B.45

C. 75

D. 90

## Answer: C

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5. If 45% of x is 90, then x% of x \_\_\_\_\_.

A. 2000

B. 400



(iii) Express  $8\frac{1}{5}$  as a percentage.

3. Find the equivalent percentage of 200 gm over 20 kg.

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**4.** A circle is inscribed in a square. The area of the circle is 154 sq. cm. Find

the percentage of the area unoc-cupied by the circle in the square.

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5. Find the profit or loss percentage in the following cases.

(i) Cost price=Rs. 500, marked price=Rs. 700 and ciscount=Rs. 250.

(ii) Selling price=Rs. 1200 and profit=Rs. 200.

6. On selling of 12 dozens of bananas for Rs. 360, a fruit seller got Rs. 120

profit. Find the cost price of banana per dozen.

7. A dealer sold two cell phones, he got 20% profit on one and 20% loss on the other. If the cost price of each cell phone is Rs. 20000, then find the profit or loss percentage.

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8. The simple interest on a certain sum P is I and the amount is A. The rate

of interest is R. Write the equations for P,R,T and A.  $I=rac{PTR}{100}.$ 



**9.** A sum of Rs. 12660 lent on simple interest at the rate of 15~% p.a. for 5 years. Find the amount at the end of 5 years.

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**10.** Mr Bhardwaj took a loan of Rs. 36000 from a money lender at 24% p.a., he clered the loan in 9 months. Find the interest paid by Mr Bhardwaj to the money lender.

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11. Anish spends Rs. 3000 from his pocket money of Rs. 5000 and saves

the rest. What is the percentage of the money that he has saved?



12. In a class of 50 students,  $26\,\%\,$  are non-vegetarians. Calculate the

number of non-vegetarian students.



**13.** In a class of 20 students, 5 are boys and remaining are girls. Find the percentage of girls.

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14. How much interest will be paid at rate of  $6\,\%$  per annum on a

borrowing of Rs. 800 for 2 years?



15. How much will be the amount to be paid after 2 years on a borrowing

of Rs. 4000 at an interest of  $10~\%\,$  per annum?



## Crossword

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# 1.

#### Across

- 3. A freaction with denominator hunderd
- 5. The selling price is more than its cost price
- 6. Interest is subtracted from amount
- 10. Money spent in a business
- 11. Money is borrowed from the bank
- 12. The total money returned

## **View Text Solution**

## Down

- 1. The total loan amo
- 2. 100% of 100
- 4. 18% of 50 and
- 7. The additional mor
- 8. Profit
- 9. The cost price is me