

Percentages-Exercise Questions updated on Dec 2024

1. What percent is 2 minutes 24 seconds of an hour?

- a. 6%
- b. 2%
- c. 4%
- d. 8%

2. Adding 20% of  $x$  to  $x$  is equivalent to multiplying  $x$  by which of the following?

- a. 12.5
- b. 1.05
- c. 1.15
- d. 1.20

3. What is the value of  $8\frac{1}{3}\%$  of 600 +  $37\frac{1}{2}\%$  of 400

- a. 100
- b. 300
- c. 150
- d. 200

4. Two third of three fifth of five sixth of a number is what percentage of that number?

- a.  $66\frac{2}{3}\%$
- b.  $33\frac{1}{3}\%$
- c. 60%
- d. 40%

5. Due to fall in manpower , the production in a factory decreases by 40%,  
By what percentage should the working hours be increased to restore the original level of production?

- a.  $66\frac{2}{3}\%$
- b.  $46\frac{1}{3}\%$
- c. 25%

d. 40%

6. The salary of all officers is increased twice successively by 20%. What is the net percentage increase in their salaries?

a. 20%

b. 40%

c. 21%

d. 44%

7. In an examination it is necessary for a candidate to get 45 % of the maximum marks to pass. A candidate who gets 180 marks, fails by 45 marks. Find the maximum marks.

a. 450

b. 600

c. 500

d. 550

8. 10 litres of water is added to 50 litres of a solution containing 20% of alcohol in water . What is the strength of alcohol in the solution now ?

a. 20%

b.  $16\frac{2}{3}\%$

c.  $12\frac{1}{2}\%$

d.  $33\frac{1}{3}\%$

9. The population of a town increase annually by 20% . If the present population is 2,00,000, then what is the difference in population after two years and three years

a. 63,250

b. 48,800

c. 60,800

d. 57,600

10. Population of a city decreases by 10% at the end of first year and increases by 10% at the end of second year and again decreases by 10% at the end of third year. If the population of the city at the end of third year is 4455, then what was the population of the city at the beginning of the first year?

- a. 5,000
- b. 4,500
- c. 4,950
- d. 1,000

11. If the price of an article decreases by  $11\frac{1}{9}\%$  and the sale of the article increases by  $12\frac{1}{2}\%$ , what is the net effect on revenue?

- a. 1% loss
- b. 1% gain
- c. No loss or no gain
- d. Cannot be determined

12. In an exam 80% of the boys and 40% of the girls passed. The number of girls who passed is 120, which is  $\frac{2}{3}$ rd of the number of boys who failed. What is the total number of students who appeared for the exam?

- a. 1200
- b. 380
- c. 3800
- d. 2180

13. The population of cities A and B is equal. The population of city A increases in two successive years by 20% and 15% respectively and that of city B increases successively by 20% and 10% respectively. If the difference in the population of two cities after 2 years is 768, then what was the total population of the two cities initially?

- a. 12,800
- b. 26,500
- c. 24,600
- d. 25,600

14. What quantity of water should be added to reduce 5 litres of 45% acidic liquid to 25% acidic liquid?

- a. 3litres
- b. 2litres

- c. 4litres
- d. 4.5litres

15. A, B, and C contest an election from a particular constituency. A and B together got 50% more votes than C. The vote share of A and C together is 30 percentage points more than the vote share of B. Who won the election?

- a. A
- b. B
- c. C
- d. Cannot be determined

16. In an examination amar got 8% less than the pass mark and mohan got 20% more than the pass mark. If the difference between the percentage of their mark is 14, then what is the pass percentage

- a. 40%
- b. 50%
- c. 60%
- d. cannot be determined.

17. The salaries of A and B together is Rs. 14,000. A spend 80% of his salary and B spends 85% of his salary. What is the salary of B if their savings are equal?

- a. Rs. 6,000
- b. Rs. 8,000
- c. Rs. 7,500
- d. Rs. 6,500

18. A sum of Rs. 395 was divided among A, B, and C in such a way that B gets 25% more than A and 20% more than C. What is the share of A?

- a. Rs.195
- b. Rs.180
- c. Rs. 98
- d. Rs. 120

19. There are three positive integers such that 70% of the first number,  $58\frac{1}{3}\%$  of second number and  $38\frac{8}{9}\%$  of the third number are all equal. Which of the following can those three numbers be?

- a. 5,6,9
- b. 10,12,18
- c. 15,18,27
- d. All the three

20. Three times a number is 20% more than twice another number when increased by 105. If twice the first number increased by 36 is 20% less than three times of the second number, then what is the first number?

- a. 150
- b. 162
- c. 180
- d. None of these

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### Answer & Explanations

1.  $2\text{mt } 24\text{s} = 144\text{s}$

$$144 * 100 / 60 * 60 = 4\%$$

2.  $120x / 100 = 1.2 * x$

3.  $25 * 600 / 300 + 75 * 400 / 200 = 50 + 150 = 200$

4.  $2/3 * 3/5 * 5/6 = 1/3$

$$1/3 x / x * 100 = 100/3 = 33 \frac{1}{3} \%$$

5. Increase in working hours  $40 * 100 / 100 - 40 = 4000 / 60 = 66 \frac{2}{3} \%$

6.  $M.F = 120 / 100 * 120 / 100 = 36 / 25$

$$\text{Net \% increase} = (M.F - 1) * 100 = (36/25 - 1) * 100$$

$$11/25 * 100 = 44 \%$$

7. Let max. mark =  $x$

$$\text{pass mark} = 45x / 100$$

$$180 = 45x / 100 - 45$$

$$x = 180 * 100 - 4500 / 45 = 500$$

8. Quantity of alcohol in 50 litres =  $50 * 20 / 100 = 10$

$$\text{strength in 60 litre solution} = 10 / 60 * 100 = 100 / 6 = 16 \frac{2}{3}$$

9.  $M.F \text{ for } 2\text{Yrs} = 120 / 100 * 120 / 100 = 36 / 25$

$$M.F \text{ for } 3\text{Yrs} = 120 / 100 * 120 / 100 * 120 / 100 = 6/5 * 6/5 * 6/5 = 216 / 125$$

$$\text{Population after } 2\text{Yrs} = 2,00,000 * 36 / 25 = 2,88,000$$

$$\text{Population after } 3\text{Yrs} = 2,00,000 * 216 / 125 = 3,45,600$$

$$\text{Difference} = 3,45,600 - 2,88,000 = 57,600$$

$$10. M. F = 90/100 * 110/100 * 100 * 90/100 = 81 * 11 / 1000$$

$$\text{Population before 3Yrs} = I.Q / M. F = 4455 * 1000 / 81 * 11 = 5000$$

$$11. M. F 1 = 100 - 100/9/100 = 800/900 = 8/9$$

$$M. F 2 = 100 + 25/2/100 = 225/200 = 9/8$$

$$\text{Total M. F} = 8/9 * 9/8 = 1$$

$$\text{Overall \% change} = (M. F - 1) * 100 = (1 - 1) * 100 = 0$$

12. Let the Number of boys = x, Number of girls = y

$$40y/100 = 120$$

$$y = 300$$

$$120 = 2/3 * 20x/100 = 2x/15$$

$$x = 900$$

$$\text{Total} = x + y = 300 + 900 = 1200$$

13. Population of city A = Population of city B = A

$$M. F \text{ of } A = 120/100 * 115/100 = 138/100$$

$$M. F \text{ of } B = 120/100 * 110/100 = 132/100$$

$$\text{Population of A after 2 years} = A * 138/100$$

$$\text{Population of B after 2 years} = A * 132/100$$

$$\text{Difference} = A/100(138 - 132) = 768$$

$$A = 768 * 100/6 = 12800$$

$$\text{Total initial population} = 12800 + 12800 = 25,600$$

14. Quantity of acid in 5 litres =  $45 * 5/100 = 2.25$  litres

Let X litres of water is added to the solution, then there is 2.25 litres of acid in (5 + X) Litres of liquid.

$$25\% \text{ of } (5 + X) = 2.25, \quad 25/100 * (5 + X) = 2.25$$

$$X = 225 - 125/25 = 4$$

15. Let a,b,c be the vote share of A, B, C respectively

$$a + b = 1.5 c$$

$$a + c = b + 30$$

$$a + b + c = 100, \quad 2b + 30 = 100,$$

$$b = 35$$

$$a = 25, \quad c = 40, \quad \text{So, C won the election.}$$

16. Let P be the pass percentage, then

Amar got 0.92 P% and mohan got 1.2 p%

Given that,  $1.2 P - 0.92 p = 14$

$$P = 14/0.28 = 50\%$$

17. Let the salaries of A and B are X and Y respectively

$$X + Y = 14,000$$

$$\text{Savings of A} = 20X/100 = \text{Savings of B} = 15Y/100$$

$$X = \frac{3}{4} Y$$

$$\frac{3}{4}Y + Y = 14,000, \quad \frac{7Y}{4} = 14,000, \quad Y = 8,000$$

18. Let each one's share is A,B and C respectively, then

$$B = 125A/100 = 120C/100$$

$$A = 100B/125 = 4/5B, \quad C = 100B/120 = 5/6B$$

$$\frac{4}{5}B + B + \frac{5}{6}B = 395, \quad \frac{79B}{30} = 395, \quad B = 395 * 30/79 = 150$$

$$A = 4 * 150/5 = 120$$

19. All the three are in the same ratio

20. Let the two numbers be x and y.

$$3x = 1.2(2y + 105)$$

$$3x = 2.4y + 126 \quad \dots\dots\dots(1)$$

$$2x + 36 = 0.8(3y)$$

$$2x + 36 = 2.4y \quad \dots\dots\dots(2)$$

$$x = 162$$