HHW

Mathematics

1. Reciprocal of zero is ____

Ans- d) None of the above

2. The multiplicative inverse of 10^{-100} is

Ans- a) 10^{100}

3. Zero (0) is the identity for addition of rational numbers.

Ans- a) The identity for subtraction of rational number

4. One (1) is the identity for addition of rational numbers.

Ans- b) The identity for multiplication of rational number

5. Find the least number by which 1323 must be ~~added~~ multiplied so that the product is a perfect cube.

Ans- c) 7

6. 2.7 is what percent of 18?

Ans- b) 15%

7. If A & B are two sets such that $n(A) = 15$, $n(B) = 21$, & $n(A \cup B) = 36$ then $n(A \cap B)$ equal to ____.

Ans- b) 0

8. If $5A \times A = 399$, then the value of a is

Ans- b) 7

9. If 30 men can do a work in 24 days. How many men will do the same work in 12 days?

Ans- b) 60

10. $a+b = b+a$ is called

Ans- Commutative Laws of addition

11. Insert three rational numbers between 2/3 and 3/4.

Ans- $\frac{2 \times 16}{3 \times 16} = \frac{32}{48}$ $\quad \frac{3 \times 12}{4 \times 12} = \frac{36}{48}$

$\frac{33}{48}, \frac{34}{48}, \frac{35}{48}$

12. Simplify: $(12)^{-2} \times 4^3$

Ans- $(12)^{-2} \times 4^3 = (3 \times 4)^{-2} \times 4^3$

$= 3^{-2} \times 4^{-2+3}$

$= \frac{1}{3^2} \times 4 = \frac{4}{9}$

13. Total pieces = 12

Total length of each piece = 2

Length = $12 \times 2 = 24$ m

14. Lcm of 7, 8, 2, 1, 5 = 280

$\frac{8 \times 40}{7 \times 40} = \frac{320}{280}$; $\frac{-9 \times 35}{8 \times 35} = \frac{-315}{280}$

$0 = 0$, $\frac{-3 \times 140}{2 \times 140} = \frac{-420}{280}$, $\frac{2 \times 56}{5 \times 56} = \frac{112}{280}$

$\frac{320}{480} > \frac{112}{280} > 0 > \frac{-315}{280} > \frac{-420}{280}$

15. Additive inverese of $7 = -7$

Multiplicative inverese of $7 = \frac{1}{7}$

$$-7 + \frac{1}{7} = \frac{-49+1}{7} = -\frac{48}{7}$$

16. Perimeter of Triangle $= 8y^2 - 9y + 4$

First side $= 3y^2 - 5y$

Second side $= 4y^2 + 12$

Third side $= P - (FS + SS)$

$= 8y^2 - 9y + 4 - (3y^2 - 5y + 4y^2 + 12)$

$= 8y^2 - 9y + 4 - 7y^2 + 5y - 12$

$= y^2 - 4y - 8$

17. A's 1day work $= \frac{1}{20}$

B's 1day work $= \frac{1}{15}$

Together work $= \frac{1}{20} + \frac{1}{15} = \frac{3+4}{60} = \frac{7}{60}$

A and B work together for $= 6$ days

$= \frac{7}{60_{10}} \times 6 = \frac{7}{10}$

Work left $1 - \frac{7}{10} = \frac{10-7}{10} = \frac{3}{10_2} \times 15^3$

Work done by B $= 4\frac{1}{2} = \frac{9}{2}$

18. (i) $P = ₹\ 630$

$I = ₹\ 126$

$T = 4$ years

$$R = \frac{I \times 100}{P \times T} = \frac{126 \times 100}{\frac{630}{5} \times 4} = \frac{25}{5} = 5\%$$

ii) $P = 1260$

$I = 252$

$T = 6$ years

$$R = \frac{I \times 100}{P \times T} = \frac{252 \times 100}{1260 \times 6}$$

19. $P = ₹\ 7500$

$T = 2$ years

$R = 8\%$

Case - 1

$$SI = \frac{P \times T \times R}{100} = \frac{7500 \times 2 \times 8}{100} = ₹ 1200$$

Case - 2

CI for 1st year $= \frac{7500 \times 1 \times 8}{100} = ₹ 600$

CI for 2nd year $= \frac{8100 \times 1 \times 8}{100} = ₹ 648$

$600 + 648 = 1248$

Case 2 - Case 1

$= 1248 - 1200 = ₹ 48$

20. Let the original price be = 100

Increased = 25% = $100 + \frac{25}{100} \times 100$

$= 125$

Percentage to back to the previous original price 100

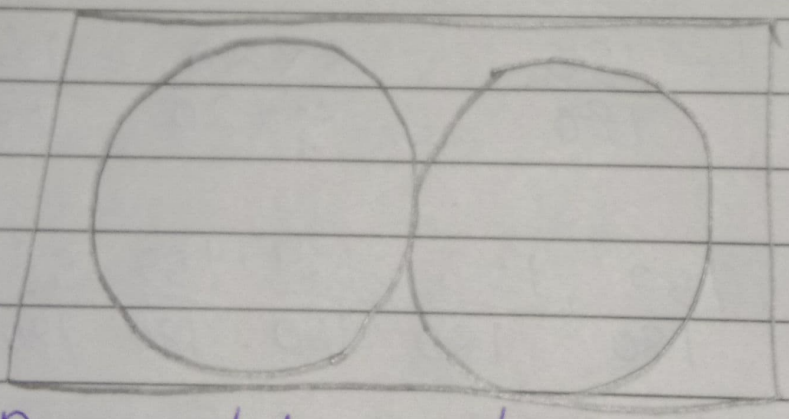
$= \frac{\text{original price} - 100}{\text{original}} \times 100$

$= \frac{125 - 100}{125} \times 100 = \frac{25}{125} \times 100^{20} = 20\%$

21. Total people in a group = 500

250 speak german and 300 speak french and people who speak both

$= 300 - 250 = 50$



22. SP paid by mohan = 912

$L = 5\%$

$CP = \frac{100}{100 - L} \times SP = \frac{100}{100 - 5} \times 912$

$= \frac{100}{95} \times 912^{48} = 960$

SP paid by peter = ₹ 960

$P = 20\%$

$CP = \frac{100}{100+P} \times SP$

$= \frac{100}{120} \times 960 = 800$

23. (i) $SP = ₹\ 14490$

$P = 5\%$

$CP = \frac{100}{105} \times 14490 = 13800$

(ii) $SP = 13800$

$L = 8\%$

$CP = \frac{100}{92} \times 13800 = 15000$

24. $\frac{5 \times 30}{6 \times 30} = \frac{150}{180}$, $\frac{8 \times 20}{9 \times 20} = \frac{160}{180}$

$\frac{151}{180}, \frac{152}{180}, \frac{153}{180}, \frac{154}{180}, \frac{155}{180}, \frac{156}{180}, \frac{157}{180}, \frac{158}{180}, \frac{159}{180}$

25. (i) $\sqrt{7.84} + \sqrt{7840}$

$= 2.8 + 280$

$= 282.8$

(ii) $\sqrt{0.0784} + \sqrt{0.0078}$

$= 0.28 + 0.028$

$= 0.308$

26. (a) The set of points of interesection of two non-parallel st. lines in the same plane. F

b) $A = \{ x : 7x - 3 = 11 \}$ T

c) $B = \{ 4 : 24 + 1 < 3 \text{ and } Y \in W \}$ T

Note: A set, which has only one element in it, is called a SINGLETON or conit set.

27. Sp of bicycle = ₹ 637

Loss = 9%

$CP = \frac{100}{100-L} > SP = \frac{100}{100-9} \times 637 = \frac{100}{91} \times 637$

$= 700$

Desireing profit = 5%

CP = 700

$SP = \frac{100 \times 5 \times 700}{100} = 705 \times 7 = 735$

= ₹ 735

28. 3 men = 6 boys

1 men = $\frac{6}{3} \times 2 = 2$ boys

10 men = $\frac{20 \times 3}{10} = 6$ days

29. 5 men maintain ₹ 2480 in = 20 days

1 men maintain money = $\frac{2480}{5 \times 20} = \frac{124}{5}$

$= 24.80$

8 men = $24.80 \times 8 = 198.40$

No of days = $\frac{6944}{1984} = 35$ days

30. $\{x : x^2 - 9x - 10 = 0\}$

$x^2 - 10x + x - 10 = 0$

$x(x-10) + 1(x-10) = 0$

$\Rightarrow (x-10)(x+1) = 0$

$\Rightarrow x - 10 = 0$

$\Rightarrow x = 0 + 10$

$\Rightarrow x = 10$

$\therefore x + 1 = 0$

$\Rightarrow x = 0 - 1$

$\Rightarrow x = -1$

$\{10, -1\}$