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sec-c Worksheet

SN- 25-39 Maths

1) Reciprocal of zero is _____

(a) 0 (b) 1 (c) -1 (d) None of the above.

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

(a) 100^{100} (b) 100^{-100} (c) 10 (d) 100

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

A) a) the indentity for substraction of rational number.

4) one (1) is the identity for addition of rational number.

A) b) the Identity for Multiplication of Rational Number

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

A) c) 7

6) 2.7 is what percent of 18 ?

A) b) 15%

7) If a & B are two sets such that n(A) = 15, n(B) = 21, & n(AUB) = 36 than n(A∩B) equal to

A) b) 0

8) if 5A x A = 399, than the value of A is

A) b) 7

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

A) b) 60

10) a) a+b = b+a is called

A) a) Commutative law of Addition

b) a whole number

11) insert three rational numbers between 2/3 and 3/4

A) $\frac{2\times16}{3\times16} = \frac{32}{48}$ $\quad \frac{3\times12}{4\times12} = \frac{36}{48}$

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

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

A) $(12)^{-2} \times 4^3 = (3\times4)^{-2} \times 4^3 = 3^{-2} \times 4^{-2} \times 4^3$

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

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

13) Total pieces = 12

Total length of each piece = 2

Total length = $12 \times 2 = 24$m

14) LCM of 7, 8, 2, 1, 5 = 280

$\frac{8\times40}{7\times40} = \frac{320}{280}$; $\frac{-9\times35}{8\times35} = \frac{-315}{280}$

$0 = 0$, $\frac{-3\times140}{2\times140} = \frac{-420}{280}$; $\frac{2\times56}{5\times56} = \frac{112}{280}$

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

15) Additive inverse of $7 = -7$

Multiplicative inverse 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 $= P - (F_s + S_s)$

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

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

$= y^2 - 4y - 8$

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

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

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

A and B worked together for $= 6$ days

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

Work left $= 1 - \frac{7}{10} = \frac{3}{10} \times 15 = \frac{9}{2}$

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

(8)i) $P = ₹630$

$I = ₹126$

$T = 4$ years

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

18) $P = 1260$
$I = 252$
$T = 6$ year

$R = \frac{I \times 100}{P \times T} = \frac{252 \times 100}{1260 \times 6} = \frac{10}{3} = 3\frac{1}{3}\%$

19) $P = ₹7500$
$T = 2$ years
$R = 8\%$

Case-2

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

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 $= 25\% = 100 + \frac{25}{100} \times 100$
$= 100 + 25$
$= 125$

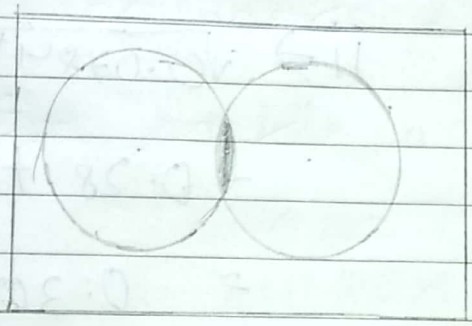
Decrease to back back to the previous original price 100 =

$$= \frac{\text{Original Price} - 100}{\text{Original}} \times 100 = \frac{125-100}{125} \times 100 = \frac{25}{125} \times 100^{20}$$

$$= 20\%$$

21) Total people in a group = 500

250 speak ~~gear~~ german and 300 speak french and people who speak both = 300 − 250 = 50



22) SP paid by Mohan = 912

L = 5%

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

$$\frac{20}{95} \times 912 = 960$$

SP paid by peter = 960

P = 20%

$$CP = \frac{100}{100+P} \times SP = \frac{100}{120} \times 960^{80} = 800$$

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

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

25) i) $\sqrt{7.84} + \sqrt{7840}$
$= 2.8 + 280$
$= 282.8$

ii) $\sqrt{0.0784} + \sqrt{0.000784}$
$= 0.28 + 0.028$
$= 0.308$

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

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

c) $B = \{y : 2y + 1 < 3 \text{ and } y \in W\}$ T

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

27) SP of Bicycle = ₹637
Loss = 9%
CP = $\frac{100}{100-L} \times SP = \frac{100}{100-9} \times 637 = \frac{100}{91} \times 637 =$ ₹700

28) Desireing profit = 5%
SP = 700
CP = $\frac{100+5}{100} \times 700 = 105 \times 7 = 35$
∴ ₹735

28) 3 men = 6 days
1 men = $\frac{6^2}{3}$ = 2 days
10 men = $\frac{2 \times 3}{10}$ = 6 days

24) 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 × 8 = 198.40
No. of days = $\frac{6944}{198.40}$ = 35 days

30) $\{x : x^2 - 9x - 10 = 0\}$
$x^2 - 10x + x - 10 = 0$
$x(x-10) + 1(x-10)$
$(x-10)(x+1)$
$x - 10 = 0$ $\quad x + 1 = 0$
$\Rightarrow x = 10$ $\quad x = -1$ $\{10, -1\}$