

# Autumn Holiday worksheet

17/10/2024

1. (i) 99999 and 100000

(ii)  $1000 - 999 = 1$

(iii) 467,306

(b) four hundred sixty seven thousand three hundred six

(c) 467,300

(iv) Thirteen lakh forty-five.

= 13,00,045

= One million three hundred thousand forty five

= 1,300,045

(v) largest three digit number, 999

2. (i) 1

(ii) 9

(iii) 556

(iv)

(iv)

$$\begin{array}{l}
 3 \overline{) 19, 15, 18, 24, 36} \\
 2 \overline{) 4, 5, 6, 8, 12} \\
 2 \overline{) 2, 5, 3, 4, 6} \\
 3 \overline{) 1, 5, 3, 2, 3} \\
 3 \times 2 \times 2 \times 6 \times 3 \times 2 \times 3 \\
 60 \times 18 \\
 = 1080
 \end{array}$$

(v)

$$\begin{aligned}
 &= 3 \times 2 \times 2 \times 3 \times 1 \times 5 \times 1 \times 2 \times 1 \\
 &= 360 \\
 &\text{Ans} = 360
 \end{aligned}$$

(vi)

$$\begin{array}{l}
 3 \overline{) 12, 18, 24, 32, 40} \\
 4 \overline{) 4, 6, 8, 32, 40} \\
 2 \overline{) 1, 6, 2, 8, 10} \\
 1, 3, 1, 4, 5 \\
 3 \times 4 \times 2 \times 3 \times 4 \times 5 \\
 = 1440 - 1 = 1439
 \end{array}$$

(vii) HCF x LCM = Product of two numbers

$$\begin{aligned}
 \Rightarrow 40 \times \text{LCM} &= 19200 \\
 \Rightarrow \text{LCM} &= \frac{19200}{40} = 480
 \end{aligned}$$

- 3. 428 140, 625
- 4. 4455
- 5. 965 320
- 6. Greatest - 9876  
Smallest = 1023
- 7. F = 9, 10, 11, 12, 133

8. (i)  $2y - 5 = -11$   
 $\Rightarrow 2y = -11 + 5$   
 $\Rightarrow 2y = -6$

(ii)  $5y - 3.5 = 10$   
 $\Rightarrow 5y = 10 + 3.5$   
 $\Rightarrow 5y = 13.5$

9. ~~A~~ = Candidate A = 932567  
 Candidate B = 900235

$$\begin{array}{r} 932567 \\ - 900235 \\ \hline 32332 \end{array}$$

Candidate A won by 32332 votes more than Candidate B.

10.  $99999 = 99998, 99997, 99996, 99995, 99994$

11.  $1000000 = 1000001, 1000002, 1000003, 1000004$

(i)  $2 \times 487 \times 50$   
 $= 2 \times 50 = 100$   
 $= 100 \times 487$   
 $= 48700$

(ii)  $25 \times 444 \times 44$   
 $= 25 \times 4 = 100$   
 $= 100 \times 444 = 44400$

(iii)  $548 \times (100 - 2)$

$$- 548 \times 100 - 548 \times 2$$

$$= 54800 - 1096$$

$$\begin{array}{r}
 548 \\
 \times 2 \\
 \hline
 1096 \\
 \hline
 54800 \\
 - 1096 \\
 \hline
 53704 \\
 = 53704
 \end{array}$$

(ii)  $924 \times 997$

$$= 924 \times (1000 - 3)$$

$$= 924 \times 1000 - 924 \times 3$$

$$= 924000 - 2772$$

$$\begin{array}{r}
 924 \\
 \times 3 \\
 \hline
 2772 \\
 \hline
 924000 \\
 - 2772 \\
 \hline
 921228 \\
 \text{Ans} = 921228
 \end{array}$$

(iii)  $3002 \times 723$

$$= 3000 \times 723 + 2 \times 723$$

$$= 2169000 + 1446$$

$$= 2170446$$

14. Add

(i)  $259$

$$\begin{array}{r}
 259 \\
 + 214 \\
 \hline
 473
 \end{array}$$

(ii)  $528$

$$\begin{array}{r}
 528 \\
 + 248 \\
 \hline
 776 \\
 \text{Ans} = 776
 \end{array}$$

(iii)  $623 - 326$

$$\begin{array}{r}
 623 \\
 - 326 \\
 \hline
 297 \\
 = -297
 \end{array}$$

5 (i)  $123 - 453$

$$\begin{array}{r} 123 \\ -453 \\ \hline 576 \end{array} = -576$$

(ii)  $(-78) - (-12)$

$$= 78 - 12 = 66$$

(iii)  $329 - (-124)$

$$\begin{array}{r} 329 \\ +124 \\ \hline 453 \end{array}$$

(iv) ~~222~~  $0 - (-222)$   
 $= 222$

16. (i)  $-8, -5, -1, 0, 4, 5$   
smaller to larger

(ii)  $-7, -6, -3, 0, 2, 4$

17. (i)  $5 \overline{) 40}$       HCF = 5  
 $\begin{array}{r} 5 \overline{) 40} \\ \underline{25} \\ 15 \end{array}$   
 $\begin{array}{r} 3 \overline{) 15} \\ \underline{15} \\ 0 \end{array}$   
 $\begin{array}{r} 2 \overline{) 12} \\ \underline{12} \\ 0 \end{array}$

$$\begin{array}{r} 24 \overline{) 492} \\ \underline{98} \phantom{24} \\ 1124 \\ \underline{24} \\ 0 \end{array}$$

Hcf 1

$$\begin{array}{r} 60 \overline{) 801} \\ \underline{60} \phantom{2} \\ 20160 \\ \underline{60} \\ 0 \end{array}$$

$$\begin{array}{r} 20 \overline{) 401} \\ \underline{40} \\ 0 \end{array}$$

Hcf 20

$$\begin{array}{r} 84 \overline{) 881} \\ \underline{84} \phantom{21} \\ 4184 \\ \underline{84} \\ 204 \\ \underline{4} \\ 0 \end{array}$$

$$\begin{array}{r} 48 \overline{) 841} \\ \underline{48} \phantom{1} \\ 36148 \\ \underline{36} \phantom{3} \\ 12136 \\ \underline{36} \\ 0 \end{array}$$

$$\begin{array}{r} 12 \overline{) 881} \\ \underline{84} \phantom{3} \\ 4112 \\ \underline{12} \\ 0 \end{array}$$

= Hcf = 4

(v) 12, 16, 28

$$\begin{array}{r} 16 \overline{) 281} \\ \underline{16} \phantom{1} \\ 121161 \\ \underline{16} \phantom{3} \\ 141121 \end{array}$$

$$\begin{array}{r} 3 \\ 4 \overline{) 12} \\ \underline{12} \\ 0 \end{array}$$

Hcf = 4

18. Hcf  $\times$  Lcm = Product of two numbers

$$\begin{aligned} 50 \times 300 &= 150 \times \text{---} \\ &= 15000 = 150 \times \text{---} \\ \Rightarrow \frac{15000}{150} &= 100 \end{aligned}$$

19.  $432 = 72 \times \text{hcf}$   
 $= \frac{432}{72} = 6$

- 20 (i)  $x + x^2 = 2$   
 (ii)  $5x^2 - 7x + 2 = 2$   
 (iii)  $x^3 - x^8 + x^{10} = 10$   
 (iv)  $1 - 100x^2 = 2$

- 21 (i)  $5xy = 5$   
 (ii)  $abc = 1$   
 (iii)  $59n = 5$   
 (iv)  $-\frac{2x}{y} = -\frac{2}{1}$

22.  $2300000 + 23$   
 $= 23 \times 100000 + 23 \times 1$   
 $= \cancel{2300000} +$   
 $23 \times (100000 + 1)$   
 $= 23 \times 100001$

23. (i)  $11011$   
 $= 11000 + 11$

$$\begin{aligned}
 &= 11 \times 1000 + 11 \times 1 \\
 &= 11 \times (1000 + 1) \\
 &= 11 \times 1001
 \end{aligned}$$

$$\begin{aligned}
 \text{(ii)} \quad 11000011 \\
 &= 11 \times 10000 + 11 \times 1 \\
 &= 11 \times (10000 + 1) \\
 &= 11 \times 10001
 \end{aligned}$$

$$\begin{aligned}
 \text{(iii)} \quad 11000011 \\
 &= 11 \times 100000 + 11 \times 1 \\
 &= 11 \times (100000 + 1) \\
 &= 11 \times 100001
 \end{aligned}$$

$$\begin{aligned}
 24 \text{ (ii) } 1608 &= 1600 + 8 = 8 \times 200 + 8 \times 1 \\
 &= 8 \times (200 + 1) \\
 &= 8 \times 201 \\
 \text{So Multiple of } 8.
 \end{aligned}$$
~~$$\begin{aligned}
 &= 8 \times 201 \\
 &= 8 \times (200 + 1) \\
 &= 8 \times 200 + 8 \times 1 \\
 &= 8 \times (200 + 1) \\
 &= 8 \times 201
 \end{aligned}$$~~

$$\begin{aligned}
 \text{(ii)} \quad 56008 &= 56000 + 8 \\
 &= 8 \times 7000 + 8 \times 1 \\
 &= 8 \times (7000 + 1) \\
 &= 8 \times 7001
 \end{aligned}$$

$$\begin{aligned}
 \text{(iii)} \quad 240008 &= 240000 + 8 \\
 &= 8 \times 30000 + 8 \times 1 \\
 &= 8 \times (30000 + 1) \\
 &= 8 \times 30001
 \end{aligned}$$



25 (i) 352  
 $= 350 + 2$   
 $= 2 \times 175 + 2 \times 1$   
 $= 2 \times (175 + 1)$   
 $= 2 \times 176$  ✓

(ii) 523  
This is not divisible by 2

(iii) 496  
 $= 490 + 6$   
 $= 2 \times 245 + 2 \times 3$   
 $= 2 \times (245 + 3)$   
 $= 2 \times 248$

(iv) 649 is not divisible by 2

26 (i) 9990  
 $= 10 \times 999$

(ii) 0  
 $= 10 \times 0 = 0$

(iii) 847 is not divisible by 10

(iv) 8976 is not divisible by 10

27 (i) 5918 - Divisible by 11

(ii) 68717 - Divisible by 11

(iii) 3882 - Not divisible by 11

(iv) 10857 = Divisible by 11

$$28. \quad 0764m3$$

$$13 + m = 15$$

15 is divisible by 3, so

$$m = 15 - 13$$

$$\rightarrow 2$$

$$6 + 4 + 2 + 3 = 15$$

so, 6423

(ii)

$$46m46$$

$$= 20 + m = 21$$

$$\rightarrow m = 1$$

21 is divisible by 3

$$46146$$

$$46146$$

(iii)

$$27m53$$

$$17 + m = 18$$

$$\rightarrow m = 1$$

because 18 is divisible by 3

$$27153$$

$$29. \quad \text{One pencil} = 22$$

$$x \text{ pencils} = 2x \times x = 2x \text{ pencils}$$

$$\text{One pen} = 15$$

$$y \text{ pen} = 15 \times y = 15y$$

$$30. \quad x \times 5 + 6 - y$$

$$= 5x + 6 - y$$

$$31. \quad \text{first floor} = 2x$$

ground floor = 12 less than rooms on first floor

$$\text{Age} = 2x - 12$$

$$32. \quad \frac{x}{4} + \frac{2x}{7} = 135$$

$$\Rightarrow \frac{7x + 8x}{28} = 135$$

$$\Rightarrow \frac{15x}{28} = 135$$

$$\Rightarrow 15x = 135 \times 28$$

$$\Rightarrow 15x = 3780$$

$$\Rightarrow x = \frac{3780}{15} = 252$$

$$33. \quad x + 12 \times 5 = 95$$

$$\Rightarrow x + 60 = 95$$

$$\Rightarrow x = 95 - 60$$

$$\Rightarrow x = 35$$

$$34. \quad \frac{x + 26}{33} = 18$$

$$\Rightarrow x + 26 = 594$$

$$\Rightarrow x = 594 - 26$$

$$\Rightarrow x = 568$$

35. Age of son =  $x$

Age of father = 27 years more than the age son

$$\Rightarrow x + 27 = 47$$

$$\Rightarrow x = 47 - 27$$

$$\Rightarrow x = 20$$

Age of son = 20

Age of father = 20 + 27 = 47

26 (v) Both are null sets

- 35 (i)  $\{2, 4, 6, 8, \dots, 200\}$  finite  
 (ii) Infinite  
 (iii) Finite  
 (iv) Finite  
 (v) Infinite

- 37 (i) False  
 (ii) False  
 (iii) True  
 (iv) True  
 (v) True

38 (i) Disjoint ~~states~~ sets  
 Girls with below ages of 15 years and above 15 years are not having any element in common.

(ii) Overlapping sets  
 Boys with ages of above 20 years and above 27 years are having elements in common

(iii) Disjoint ~~sets~~ overlapping set  
 Natural number between 35 and 50 and 50 to 80 would have elements in common.

(iv) Overlapping set  
~~Set P of students~~ Students in Q are subsets of set P

(v) Disjoint set overlapping sets

Set: A contains 6, 9, 12, 15, 18, 21 and 24  
and set B contains 24, 28, 32, 36  
and 40. Both are having 24 as  
common

38. (i)  $A = 4$

(ii)  $B = 4$

(iii)  $C = 0$

(iv)  $D = 1, 3$

(v)  $E = 4$

39. 1

40. 1 line