

1) Fill in the blanks:

i) The largest number of 5-digits is 99999 and the smallest number of 6-digits is 100000.

ii) The difference between the smallest number of four digits and the largest number of three digit = 1000 - 999 = 1

iii) Four lakh sixty-seven thousand three hundred six.

= 4,67,306 (In numeral form)

= ~~467,306~~

(In International System)

= ~~four hundred sixty seven thousand three hundred six~~ (In International Numeration)

iv) Thirteen lakhs forty-five.

= 13,00,045 (In numerals form)

= 1,30,045 (In International System)

= ~~One million three hundred thousand forty five~~ (In International numeration)

v) On subtracting one from the smallest four-digit number we get 999 which is the largest three-digit number.

2. Choose the correct answer.

1) Which is the smallest factor of 2314?

Ans: a) 2314 b) 1 c) 2 d) 1152

ii) Which is the smallest odd composite number?

- a) 1 b) 3 c) 9 d) 15

iii) Which of the following is divisible by 2 but not by 4?

- a) 102 b) 238 c) 340 d) 556

iv) Find the smallest number which, when divided by 12, 15, 18, 24 and 36 leaves no remainder.

- a) 360 b) 720 c) 180 d) 480

v) Find the smallest number which, when increased by one is exactly divisible by 12, 18, 24, 32 and 40

- a) 1439 b) 1340 c) 650 d) 780

vi) The product of two numbers is 19,200 and their H.C.F. is 40. Find their L.C.M.

- a) 380 b) 480 c) 680 d) 160

3. Write 428140625 by placing the commas according to International System.
~~428140625~~ 428,140,625

4. Take two digit 4 and 5. The smallest 4-digit number using the digits equal number of times is

- a) 4455 b) 5544 c) 5454 d) 4545

5. ~~Form~~ ^{Form} the largest number with the digits 2, 3, 5, 9, 6 and 0 without repetition of any digit.

Ans:- 965320

6. Write the smallest and the greatest number of four digits without repetition of any digit.

Ans:- Smallest:- 1023 Greatest:- 9876

7. Write the cardinal number of $F = \{ \text{Whole numbers from } 8 \text{ to } 14 \}$

Ans:- $F = \{ 8, 9, 10, 11, 12, 13, 14 \}$

8. Solve the following

i) $2y - 5 = -11$

Ans:- $2y = 5 - 11$

$$2y = -6$$

$$y = -3$$

ii) $5y - 3 \cdot 5 = 10$

Ans:- $5y = 10 + 3 \cdot 5$

$$5y = 13 \cdot 5$$

$$y = 2 \cdot 7$$

9. In an election two candidates ^{dates} A and B are only contestants. If candidate A scored 932567 votes and candidate B scored 900235 votes, by how much margin did A win or lose the election.

Ans:- Votes ~~scored~~ scored by candidate A = 932567

Votes scored by candidate B = 900235

\therefore Candidate A win and by = 032332

10. Starting from greatest 5-digit number, write the previous five numbers in descending order.

Ans: 99,999; 99,998; 99,997; 99,996; 99,995

11. Starting from smallest 7-digit number, write the next four numbers in ascending order.

Ans: 10,00,000; 10,00,001; 10,00,002; 10,00,003

12. By re-arranging the given number, evaluate.

i) $2 \times 487 \times 50$

Ans: $\Rightarrow 2 \times 50 \times 487 = 100 \times 487 = 48700$

ii) $25 \times 444 \times 4$

Ans: $\Rightarrow 25 \times 4 \times 444 = 100 \times 444 = 44400$

13. Evaluate using properties.

i) 548×98

Ans: $\Rightarrow 548 \times 98$

$$= 548 (100 - 2) = 548 \times 100 - 548 \times 2 = 54800 - 1096 = 53704$$

ii) 924×997

Ans: $\Rightarrow 924 \times 997$

$$= 924 (1000 - 3) = 924 \times 1000 - 924 \times 3 = 924000 - 2772 = 921228$$

iii) 3002×723

Ans: $\Rightarrow 3002 \times 723$

$$= (3000 + 2) \times 723 = 3000 \times 723 + 723 \times 2 = 2169000 + 1446 = 2170446$$

14. Add

i) 259 and 214

$$259 + 214 = 473$$

ii) -528 and -243

$$-528 + (-243) = -771$$

iii) -623 and 326

$$-623 + 326 = -297$$

15. Subtract

i) -123 from 453

$$453 - (-123) = 453 + 123 = 576$$

ii) -78 from -12

$$-12 - (-78) = -12 + 78 = +66$$

iii) 329 from -124

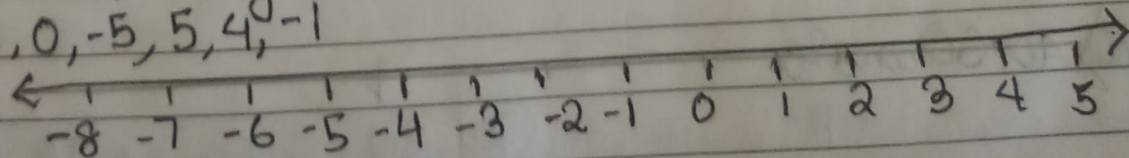
$$-124 - 329 = -453$$

iv) -222 from 0

$$0 - (-222) = 0 + 222 = 222$$

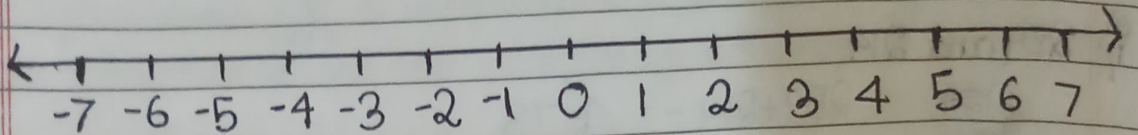
16. In each case arrange the given integer in ascending order, using a number line.

i) -8, 0, -5, 5, 4, -1



Hence :- -8, -5, -1, 0, 4, 5

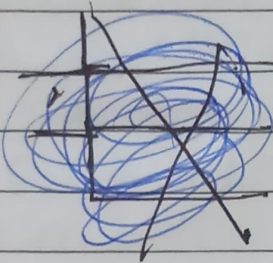
ii) 3, -3, 4, -7, 0, -6, 2



Hence, -7, -6, -3, 0, 2, 3, 4

17. Find the H.C.F of

9) Bands



$$\begin{array}{r}
 1 \\
 \hline
 5 \overline{) 8} \\
 \underline{-5} \\
 3 \\
 \underline{-3} \\
 0
 \end{array}$$

Answer 1

ii) 24 and 49

$$\begin{array}{r}
 2 \\
 \hline
 24 \overline{) 49} \\
 \underline{-48} \\
 1 \\
 \underline{-24} \\
 0
 \end{array}$$

Answer 1

iii) 40, 60 and 80

$$\begin{array}{r}
 1 \\
 \hline
 40 \overline{) 60} \\
 \underline{-40} \\
 20 \\
 \underline{-20} \\
 0
 \end{array}$$

$$\begin{array}{r}
 4 \\
 \hline
 20 \overline{) 80} \\
 \underline{-80} \\
 0
 \end{array}$$

Ans: -20

iv) 48, 84 and 88

$$\begin{array}{r}
 1 \\
 48 \overline{) 84} \\
 \underline{-48} \\
 36 \overline{) 48} \\
 \underline{-36} \\
 12 \overline{) 36} \\
 \underline{-36} \\
 0
 \end{array}$$

$$\begin{array}{r}
 7 \\
 12 \overline{) 88} \\
 \underline{-84} \\
 4 \overline{) 12} \\
 \underline{-12} \\
 0
 \end{array}$$

Answer:- 4

v) 12, 16 and 28

$$\begin{array}{r}
 1 \\
 12 \overline{) 16} \\
 \underline{-12} \\
 4 \overline{) 12} \\
 \underline{-12} \\
 0
 \end{array}$$

$$\begin{array}{r}
 7 \\
 4 \overline{) 28} \\
 \underline{-28} \\
 0
 \end{array}$$

Answer:- 4

18. The H.C.F and L.C.M of two number are 50 and 300 respectively. If one of number is 150, find ~~number~~ the other one.

Ans:- Product of H.C.F and L.C.M = Product of two number.
 $50 \times 300 = 150 \times \text{other number}$

$$\text{Other number} = \frac{50 \times 300}{150} = 100$$

19. The product of two numbers is 432 and their LCM is 72. Find their HCF.

Product of HCF and LCM = Product of two number.
 $\text{HCF} \times 72 = 432$

$$\begin{aligned} \text{HCF} &= 432 \div 72 \\ &= 6 \end{aligned}$$

\therefore HCF is 06

20. Write the degree of each of the following polynomials.

i) $x + x^2$

Ans: 2

ii) $5x^2 - 7x + 2$

Ans: 2

iii) $x^3 - x^8 + x^{10}$

Ans: 10

iv) $1 - 100x^2$

Ans: 2

21. State the numeral coefficient of the following monomials

i) $5xy$

Ans: 5

ii) abc

Ans: 1

iii) $5pqr$

Ans: 5

iv) $-2x/y$

Ans: -2

22. Without making any actual division, show that 2300023 is divisible by 23.

Ans:- $23 = (2300000 + 23)$
 $23 \times (1 + 100000) = 23 \times 100001$

23. Without making any actual division, show that each of the following numbers is divisible by 11.

i) 11011

Ans:- $11011 = (11000 + 11)$
 $11 \times (1 + 1000) = 11 \times 1001$

ii) 110011

Ans:- $110011 = (110000 + 11)$
 $11 \times (1 + 10000) = 11 \times 10001$

iii) 11000011

Ans:- $11000011 = (11000000 + 11)$
 $11 \times (1 + 1000000) = 11 \times 1000001$

24. Without making actual division, show that each of the following numbers is divisible by 8.

i) 1608

Ans:- $1608 = 1600 + 8$
 $8 \times (200 + 1) = 8 \times 201$

ii) 56008

Ans:- $56008 = 56000 + 8$
 $8 \times (7000 + 1) = 8 \times 7001$

iii) 240008

Ans:- $240008 = 240000 + 8$
 $8 \times (30000 + 1) = 8 \times 30001$

25) Find which of the following numbers are divisible by 2.

- i) 352 ii) 523 iii) 496 iv) 649

26) Find which of the following numbers are divisible by 10.

- i) 9990 ii) 0 iii) 847 iv) 8976

27) Find which of the following numbers are divisible by 11

- i) 5918 ii) 68,717 ~~iii) 3882~~ iv) 10857

28) In each of the following ~~place value~~ numbers, replace M by the smallest number to make resulting number divisible by 3:

i) 64M3

Ans:- 6423

ii) 46M46

Ans:- 46146

iii) 27M53

Ans:- 27153

29) One pencil costs Rs 2 and one fountain pen costs Rs 15. What is the cost of x pencils and y fountain pens?

Ans:- One pencil costs Rs 2 x pencil cost $x \times 2 = 2x$
One fountain pen costs Rs 15 y fountain pens cost $15 \times y = 15y$

~~30) The number of~~

30) Think of a number. Multiply by 5. Add 6 to the result. Subtract y from this result. What is the result?

Ans:- let the number be $2x$

\Rightarrow ~~$2x$~~ $5 \times 2x = 5x$

$\Rightarrow 5x + 6$

\Rightarrow Subtraction of y from the result = $5x + 6 - y$

Solution: $5x + 6 - y$

31) The number of rooms on the ground floor of a building is 12 less than the twice of the number of rooms on first floor. If the first floor has x rooms, how many rooms does the ground floor has?

Ans:- Given:- Number of rooms in first floor = x

Number of rooms in ground floor = 12 less than $2x$

$2x = 2x - 12$

\therefore , the rooms ground floor contain are $2x - 12$

32) One-fourth of a number add to two-seventh of it gives 135; find the number.

Ans:- let the number be x

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

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

$15x = 135 \times 28$

$x = \frac{135 \times 28}{15} = 252$

33) A number is increased by 12 and the new number obtained is multiplied by 5. If the resulting number is 95, find the original number.

Ans:- Let the number be x .

• x increased by 12 = $x+12$ is the new number
 multiplied by 5 = $(x+12) \times 5$

$$(x+12)5 = 95$$

$$\textcircled{\times} 5x + 60 = 95$$

$$5x = 95 - 60$$

$$5x = 35$$

$$x = \frac{35}{5} = 7$$

34) A number is increased by 26 and the new number obtained is divided by 33. If the resulting number is 18; find the original number.

Ans:- Let the number be x

x increased by 26 = $x+26$ is the new number
 new number is divided by 33 = $\frac{x+26}{33} = 18$

$$\frac{x+26}{33} = 18$$

$$x+26 = 18 \times 33$$

$$x = 594 - 26$$

$$x = 468$$

The original number = 468

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35) The age of a man is 27 years more than the age of his son. If the sum of their ages is 47 years, find the age of the son and his father.
Let the number be x

$$\text{Age of son} = x$$

$$\text{Age of father} = x + 27$$

$$\text{Sum of their ages } 2x + 27 = 47$$

$$2x = 47 - 27$$

$$2x = 20$$

$$x = 10$$

$$10 + 27 = 37$$

\therefore the age of son = 10 years

the age of father = 37 years

36) State whether the following are finite or infinite sets.

i) $\{2, 4, 6, 8, \dots, 800\}$ finite

ii) $\{0, \dots, -5, -4, -3, -2\}$ infinite

iii) $\{x: x \text{ is an integer between } -60 \text{ and } 60\}$ finite

iv) $\{\text{No. of electrical appliances working in your house}\}$ finite

v) $\{x: x \text{ is a whole number greater than } 20\}$ infinite

37) For each statement, given below, write True or False

i) $\{\dots, -8, -4, 0, 4, 8\}$ is a finite set. False

ii) $\{-32, -28, -24, -20, \dots, 0, 4, 8, 16\}$ is an infinite set.

False

iii) $\{x : x \text{ is a natural number less than } 1\}$ is the empty set. true

iv) $\{ \text{Whole numbers between } 15 \text{ and } 16 \}$ = $\{ \text{Natural numbers between } 5 \text{ and } 6 \}$. true

v) $\{ \text{Odd numbers divisible by } 2 \}$ is the empty set. true

38) State, giving reasons, which of the following pairs of sets disjoint sets and which are overlapping sets.

i) $A = \{ \text{girls with age below } 15 \text{ years} \}$ and $B = \{ \text{girls with age above } 15 \text{ years} \}$.

Ans:- Disjoined sets

ii) $C = \{ \text{Boys with age above } 20 \text{ years} \}$ and $D = \{ \text{Boys with age above } 27 \text{ years} \}$.

Ans:- Overlapping sets

iii) $A = \{ \text{Natural numbers between } 30^5 \text{ and } 60 \}$ and $B = \{ \text{Natural numbers between } 50 \text{ and } 80 \}$

Ans:- Overlapping sets

iv) $P = \{ \text{Students of class IX studying in I.C.S.E board} \}$ and $Q = \{ \text{Students of class IX} \}$.

Ans:- Overlapping sets

v) $A = \{ \text{Natural number of multiples of } 3 \text{ and less than } 30 \}$ and $B = \{ \text{Natural number divisible by } 4 \text{ and between } 20 \text{ and } 45 \}$

Ans:- Disjoined sets

39) Write the cardinal number of each of the following sets.

i) ~~Set~~ $A = \{0, 1, 2, 4\}$

Ans: - $n(A) = 4$

ii) ~~Set~~ $B = \{-3, -1, 1, 3, 5, 7\}$

Ans: - $n(B) = 6$

iii) $C = \{ \}$

Ans: - $n(C) = 0$

iv) $D = \{3, 2, 2, 1, 3, 1, 2\}$

Ans: - $n(D) = 3$

v) $E = \{ \text{Natural numbers between 15 and 20} \}$

Ans: - $n(E) = 5$

40) How many perpendicular bisectors are there for a line segment of length 12 cm.

Ans: - One

41) How many lines can pass through 2 points in a plane.

Ans: - Only one line