CHAPTER -1 KNOWING YOUR NUMBERS

SECTION -A

A) MULTIPLE CHOICE QUESTIONS [1 marks]

1)Keeping the place value of digit 8 same in 36,80,591, the smallest number is:

(a) 10,83,569 (b) 1,08,35,69 (c) 1083569 (d) 1,083,569

Answer :a)

: 8 remains at ten thousands place → Smallest = 1083569.

2)Greatest 5-digit number with three different digits (9,8,7):

a) 99987

b) 98799

c) 99978

d) 99879

Answer: a) 99987

3)All possible 2-digit numbers from digits 2,7,9 (no repetition):

a) 6 numbers

b) 4 numbers

c) 9 numbers

d) 3 numbers

Answer: a) 6 numbers

Solution: 27,72,29,92,79,97.

4)How is 29307546 written with commas in Indian system?

a) 29,30,75,46

b) 2,93,07,546

c) 293,075,46

d) 2,930,7546

Answer: b) 2,93,07,546

5)The place value of 7 in 7302 is:

a) 7

b) 70

c) 700

d) 7000

Answer: d) 7000

6)The face value of digit 5 in 5354 (whether in thousands or tens place) is:

a) 5000

b) 50

c) 5

d) 500

Answer: c) 5

7)Total number of 4-digit numbers_____

a)9000

b)9999
c)10000
d)none of these
Solutions:-
Largest 4-digit number: 9,999
Smallest 4-digit number: 1,000
Formula: (largest-smallest)+1
Calculation: (9999-1000)+1
Correct Option: (a) 9000
ASSERTION AND REASONING
Option A: Both A (Assertion) and R (Reason) are true, and R is the correct explanation of A.
Option B: Both A and R are true, but R is NOT the correct explanation of A.
Option C: A is true, but R is false.
Option D: A is false, but R is true.
8)Assertion (A): Face value of a digit is always the same as the digit itself.
Reason (R): Place value depends on the position of the digit.
Ans-B
9)Assertion (A): In Indian system, commas are placed after every three digits from right in the beginning then after every two.
Reason (R): Periods are ones (3 places), thousands (2), lakhs (2), etc.
Answer: a)
10)Assertion (A): 0 cannot be placed at the highest place while forming smallest numbers.
Reason (R): It would reduce the number of digits.
Answer: a) (Both true, R explains A)

SECTION B

ANSWER THE FOLLOWING [2 marks]
1)Find the place value of 5 in 5354 and compare it with the place value of 5 in the same number at another place. (2 Marks)
Solution:
In 5354:
5 at thousands place → 5 × 1000 = 5000
5 at tens place → 5 × 10 = 50
: Compare 5000 > 50 (Place value depends on position)
Answer: Place values are 5000 and 50.
2)Convert 3 hours 45 minutes into minutes. (2 Marks)
Solution:
1 hour = 60 minutes
3 hours = 3 × 60 = 180 minutes
Add 45 minutes
Total = 180 + 45 = 225 minutes

Answer: 225 minutes

3)Keeping the place value of digit 8 same, rearrange the digits of 36,80,591 to form the greatest possible number. (2 Marks)

Solution:

8 is at ten-thousands place.

Arrange remaining digits (3,6,0,5,9,1) in descending order around 8.

Answer: 9,86,53,10 or 9865310

4)The number of students in a school is 87,654. Write it in expanded form using Indian system. (2 Marks)

Solution:

87,654 = 8 ten-thousands + 7 thousands + 6 hundreds + 5 tens + 4 ones

Answer:

87,654 = 8 × 10,000 + 7 × 1,000 + 6 × 100 + 5 × 10 + 4 × 1

= 80,000 + 7,000 + 600 + 50 + 4

5)How many 6-digit numbers are there in all? (2 Marks)

Solution:

Smallest 6-digit number = 1,00,000

Greatest 6-digit number = 9,99,999

Total = 9,99,999 – 1,00,000 + 1 = 9,00,000

Answer: 9,00,000 six-digit numbers.

SECTION C

Do as directed [3 marks]

1)Keeping the place value of digit 8 same in 36,80,591, form the greatest and smallest 7-digit numbers. (3 Marks)

Solution:

8 is at ten-thousands place.

Greatest: Arrange remaining digits (9,6,5,3,1,0) descending → 9,86,53,10

Smallest: Arrange remaining digits ascending after smallest non-zero at highest place → 1,08,35,69

Answer: Greatest = 9865310; Smallest = 1083569

2)Form all possible 3-digit numbers using digits 2, 5, 7 without repetition. (3 Marks)

Solution:

Units place 2 → 572, 752

Units place 5 → 275, 725

Units place 7 → 257, 527

Answer: 257, 275, 527, 572, 725, 752

3)What is the difference between the place value of 7 in 7,65,432 and 76,543? (3 Marks)

Solution:

In 7,65,432 → 7 at lakhs place = 7,00,000

In 76,543 → 7 at ten-thousands place = 70,000

Difference = 7,00,000 – 70,000 = 6,30,000

Answer: 6,30,000

4)school has 87,654 students. Write this number in International system with commas and in words. (3 Marks)

Solution:

International: 87,654

In words: Eighty seven thousand six hundred fifty four.

Answer: 87,654 — Eighty seven thousand six hundred fifty four.

5)A shopkeeper sold items worth ₹ 4,56,780 on Monday and ₹ 5,23,450 on Tuesday. On which day did he sell more? By how much? (Real-life Application)

Solution:

: Compare: 5,23,450 > 4,56,780 (at lakhs place 5 > 4)

Difference: 5,23,450 − 4,56,780 = 66,670

Answer: Tuesday, by ₹ 66,670

SECTION D

Answer the following [4 marks]

1)Convert ₹ 356.75 into paise. If this amount is to be distributed equally among 5 students, how much will each student get?

A1)

We know that:

1 Rupee = 100 Paise

The given amount is ₹ 356.75

This can be split as:

Whole rupees = ₹ 356

Decimal part (paise) = ₹ 0.75

Convert whole rupees into paise

₹ 356 = 356 × 100 paise

= 35,600 paise

Convert the decimal part into paise

₹ 0.75 = 75 paise (already in paise form)

Step 4: Find the total amount in paise

Total paise = Paise from whole rupees + Decimal paise

= 35,600 + 75

= 35,675 paise

2)Write the place value and face value of each digit in the number 73,05,642. Also write the number in expanded form using the Indian system.

Detailed Solution:

Identify the place of each digit (Indian System):

7 → Ten Lakhs, 3 → Lakhs, 0 → Ten Thousands, 5 → Thousands, 6 → Hundreds, 4 → Tens, 2 → Ones

Calculate Place Values:

7 × 10,00,000 = 70,00,000

3 × 1,00,000 = 3,00,000

0 × 10,000 = 0
5 × 1,000 = 5,000
6 × 100 = 600
4 × 10 = 40
2 × 1 = 2
Face value of each digit is the digit itself: 7, 3, 0, 5, 6, 4, 2
Expanded Form:
73,05,642 = 7 × 10,00,000 + 3 × 1,00,000 + 0 × 10,000 + 5 × 1,000 + 6 × 100 + 4 × 10 + 2 × 1
Final Answer:
Place values: 70,00,000; 3,00,000; 0; 5,000; 600; 40; 2
Face values: 7, 3, 0, 5, 6, 4, 2
Expanded: 70,00,000 + 3,00,000 + 5,000 + 600 + 40 + 2
3)Convert ₹ 1,256.75 into paise. If this amount is to be divided equally among 8 students, how much will each student get in rupees and paise?
Detailed Solution:
Conversion: 1 ₹ = 100 paise
₹ 1,256.75 = (1,256 × 100) + 75 = 1,25,600 + 75 = 1,25,675 paise
Divide among 8 students:
1,25,675 ÷ 8 = 15,709.375 paise
Convert back to rupees:
15,709 paise = ₹ 157.09
(15,709 ÷ 100 = 157 rupees and 9 paise)
Final Answer: Each student gets ₹ 157.09 (or 15,709 paise)
4)Compare 4,56,789 and 4,65,432. Which is greater? Arrange the following in ascending order: 4,56,789; 87,654; 4,65,432; 3,45,678.
Detailed Solution:
Comparison: Both 6-digit numbers. At ten-thousands place, 6 > 5 → 4,65,432 > 4,56,789
Ascending Order:
5-digit: 87,654
6-digit numbers: 3,45,678 < 4,56,789 < 4,65,432
Final Answer: 4,65,432 is greater.
Ascending order: 87,654; 3,45,678; 4,56,789; 4,65,432
5)Convert 2 years 8 months into days (assume 365 days in a year and 30 days in a month).
Detailed Solution:
2 years = 2 × 365 = 730 days
8 months = 8 × 30 = 240 days
Total = 730 + 240 = 970 days
Final Answer: 970 days

CHAPTER -2 WHOLE NUMBERS

SECTION -A

MULTIPLE CHOICE QUESTION [1 marks]

1)Which is the smallest whole number?

A) 1

B) 0

C) -1

D) 10

Correct Answer: B

2)What is the successor of 3799?

A) 3798

B) 3800

C) 3799

D) 3801

Correct Answer: B

Step-wise Solution:

Successor of a whole number = given number + 1.

3799 + 1 = 3800.

3)What is the predecessor of 531010?

A) 531011

B) 531009

C) 531010

D) 531000

Correct Answer: B

Step-wise Solution:

Predecessor of a whole number (except 0) = given number - 1.

531010 - 1 = 531009.

4)How many whole numbers are there between 81 and 101?

A) 19

B) 20

C) 21

D) 18

Correct Answer: A

Solution:

Whole numbers between 81 and 101: 82 to 100 (inclusive).

Number of terms = 100 - 81 = 19.

81 is excluded, 100 is included

5)Which property is shown by 18 + 23 = 41 (a whole number)?

A) Commutative

B) Closure

C) Associative
D) Distributive
Correct Answer: B
6)39 + 28 = 28 + 39 shows which property?
A) Associative
B) Closure
C) Commutative
D) Additive identity
Correct Answer: C
7)(8 + 13) + 6 = 8 + (13 + 6) shows which property?
A) Commutative
B) Associative
C) Closure
D) Distributive
Correct Answer: B
ASSERTION AND REASONING
A) Both A and R are true and R is the correct explanation of A.
B) Both A and R are true but R is not the correct explanation.
C) A is true but R is false.
D) A is false but R is true.
8)Assertion (A): Whole numbers are not closed under subtraction.
Reason (R): If a < b, then a – b is not a whole number.
Answer: Both A and R are true, and R is the correct explanation of A.
9)Assertion (A): Successor of 0 is 1.
Reason (R): Successor of a whole number n is n + 1.
Answer: Both A and R are true, and R is the correct explanation of A.
10)Assertion (A): 1 is the multiplicative identity for whole numbers.
Reason (R): For any whole number a, a × 1 = a = 1 × a.
Answer: Both A and R are true, and R is the correct explanation of A.

SECTION B

Answer the following [2 marks]
1)How many whole numbers are there between 50 and 70?
Solution: Whole numbers from 51 to 69 = 69 – 51 + 1 = 19.
2)Find 12 × 25 × 8 using associative property.
Solution: 12 × (25 × 8) = 12 × 200 = 2400.
3)Simplify using distributive property: 658 × 42 + 658 × 158.
Solution: 658 × (42 + 158) = 658 × 200 = 131600.
4)How many 3-digit whole numbers are between 99 and 201?
Solution: From 100 to 200 = 101 numbers.
5)Rearrange and add: 987 + 13 + 987 + 13.
Solution: 2×(987+13) = 2×1000 = 2000.

SECTION -C

Do as directed [3 marks]

1)Find the value of 1396 × 99 using suitable property. (3 Marks)

Solution:

99 = 100 – 1

1396 × 99 = 1396 × (100 – 1) = (1396 × 100) – (1396 × 1)

139600 – 1396 = 138204

2)Find the greatest 4-digit number which is exactly divisible by 135. (3 Marks)

Solution:

Greatest 4-digit number = 9999

Divide 9999 by 135 → Quotient = 74, Remainder = 9

Subtract remainder: 9999 – 9 = 9990

9990 is divisible by 135.

3)Using suitable rearrangement, find the sum: 456 + 789 + 544 + 211. (3 Marks)

Solution:

Group numbers that make addition easier: (456 + 544) + (789 + 211)

456 + 544 = 1000

789 + 211 = 1000

Total sum = 1000 + 1000 = 2000

4)Show that multiplication is distributive over subtraction: Take 12 × (15 – 8). (3 Marks)

Solution:

Left Hand Side: 12 × (15 – 8) = 12 × 7 = 84

Right Hand Side: 12 × 15 – 12 × 8 = 180 – 96 = 84

: LHS = RHS. Hence, distributive property is verified.

5)A fruit seller buys 25 boxes of mangoes. Each box contains 42 + 158 mangoes. Using the distributive property of multiplication over addition, find the total number of mangoes he bought.(3 Marks)

Solution:

Total mangoes = 25 × (42 + 158)

First, add inside bracket: 42 + 158 = 200

25 × 200 = 5000

Alternative using Distributive Property:

25 × 42 + 25 × 158 = 1050 + 3950 = 5000

SECTION D

Answer the following [4 marks]

1)In a school library, there are 837 books on Science, 509 books on Mathematics, and 363 books on English. The librarian wants to arrange them on shelves. Using suitable properties of whole numbers, find the total. (4 Marks)

Solution:

Total books = 837 + 509 + 363

Use rearrangement (Commutative + Associative property):

(837 + 363) + 509
837 + 363 = 1200
1200 + 509 = 1709
2)Find the value of 6750 × 464 – 6750 × 418 + 6750 × 54 using properties. (4 Marks)
Solution:
= 6750 × (464 – 418 + 54)
= 6750 × (46 + 54)
= 6750 × 100 = 675000
3)How many whole numbers are there between 999 and 2001? How many of them are 4-digit numbers? (4 Marks)
Solution:
Whole numbers between 999 and 2001 = 1000 to 2000
Total numbers = 2000 – 1000 + 1 = 1001
4-digit numbers in this range = 1000 to 2000 → 1001 numbers.
4)Find the next four consecutive whole numbers after 8996. Find their sum using properties. (4 Marks)
Solution:
Next four: 8997, 8998, 8999, 9000
Sum: (8997 + 9000) + (8998 + 8999) = 17997 + 17997 = 35994
5)A school has 675 students. If each student gets 18 notebooks, find the total notebooks needed using distributive property. (4 Marks)
Solution:
Total = 675 × 18
18 = 20 – 2
675 × 20 – 675 × 2 = 13500 – 1350 = 12150

INTEGERS

SECTION -A

MULTIPLE CHOICE QUESTION [1 marks]
1)Which of the following is not an integer?
A) -5
B) 0
C) 3.5
D) 7
Answer: C) 3.5
Reason: Integers are whole numbers including negative numbers, zero, and positive numbers. 3.5 is a decimal, so it is not an integer.
Q2. The numbers to the left of zero on a number line are:
A) Positive integers
B) Negative integers
C) Non-negative integers
D) Natural numbers

Answer: B) Negative integers

3)What is the absolute value of -8?

A) -8

B) 8

C) 0

D) -16

Answer: B) 8

4)Which of the following is true?

A) $-5 > -2$

B) $-5 < -2$

C) $-5 = -2$

D) $-5 > 0$

Answer: B) $-5 < -2$

Reason: For two negative integers, the one with the bigger absolute value is smaller. $|-5| = 5 > |-2| = 2$, so $-5 < -2$.

5)How many integers are there between –4 and 2?

A) 4

B) 5

C) 6

D) 7

Answer: B) 5

Reason: The integers are –3, –2, –1, 0, 1. Total = 5.

6)$-12| + |-5| = ?$

A) –17

B) 17

C) 7

D) –7

Answer: B) 17

Reason: $|-12| = 12$, $|-5| = 5$, so $12 + 5 = 17$.

7)Which symbol correctly fills the blank: –9 ___ –15?

A) >

B) <

C) =

D) None

Answer: A) >

Reason: $|-9| = 9 < |-15| = 15$, so $-9 > -15$.

Assertion-Reason Questions

8)

Assertion (A): Zero is greater than every negative integer.

Reason (R): Zero lies to the right of all negative integers on the number line.

A) Both A and R are true and R is correct explanation of A.

B) Both A and R are true but R is not correct explanation.
C) A is true but R is false.
D) A is false but R is true.
Answer: A) Both true and R explains A.
9)Assertion (A): |–7| = –7.
Reason (R): Absolute value is always positive or zero.
Answer: C) A is false but R is true.
(|–7| = 7, not –7)
10)Assertion (A): 0 is a positive integer.
Reason (R): Positive integers start from 1.
Answer: D) A is false but R is true.

SECTION -B

Answer the following [2 marks]
1)A submarine is at 250 m below sea level. It rises 180 m. What is its new position?
Solution:
Initial: -250
Rises 180 m: -250 + 180 = -70 m (70 m below sea level)
2)Find the successor and predecessor of:
(i) -10
(ii) 0
Solution:
(i) Successor of -10 = -9
Predecessor of -10 = -11
(ii) Successor of 0 = 1
Predecessor of 0 = -1
3)Arrange in descending order:
42, -19, -5, 8, -27
Solution:
Positive first: 42 > 8
Negative: -5 > -19 > -27
Final: 42 > 8 > -5 > -19 > -27
4)Evaluate:
(i) |-9| + |6|
(ii) |-15| - |-7|
Solution:
(i) 9 + 6 = 15
(ii) 15 - 7 = 8
5)On a particular day, the temperature at noon was 8°C and at midnight it was 7°C below zero. What is the fall in temperature? Represent using integers. (3 marks)
Solution:
Noon: +8°C

Midnight: -7°C
Fall = 8 - (-7) = 8 + 7 = 15°C

SECTION-C

Do as directed [3 marks]

1)A lift is at 3rd floor (represent as +3). It goes down 5 floors, then up 2 floors. Where is it now? Show using number line movements. (3 marks)

Solution:

Start: +3

Down 5: 3 - 5 = -2 (2 floors below ground)

Up 2: -2 + 2 = 0 (Ground floor)

2)Draw number line

(i) 5 more than -3

Step-by-step explanation:

"5 more than -3" means we start at -3 and move 5 units to the right (positive direction).

Starting point: -3

Move 5 steps right: -3 → -2 → -1 → 0 → 1 → 2

<--- Left (Negative) Zero Right (Positive) --->

-8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6

↑

Start (-3)

Movement (5 units right):

----------→

-3 -2 -1 0 1 2

Final Position: ↑ (2)

ii)4 less than 2

Step-by-step explanation:

"4 less than 2" means we start at 2 and move 4 units to the left (negative direction).

Starting point: 2

Move 4 steps left: 2 → 1 → 0 → -1 → -2

<--- Left (Negative) Zero Right (Positive) --->

-8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6

↑

Start (2)

Movement (4 units left):

←----------

2 1 0 -1 -2

Final Position: ↑ (-2)

3)A shopkeeper had a loss of ₹180 on Monday and profit of ₹250 on Tuesday. What is his net result for two days? (3 marks)

Solution:

Monday: -180

Tuesday: +250

Net: -180 + 250 = +70 (Profit of ₹70)

4) Evaluate

(i) -9 + 13

(ii) 7 - 12

(iii) -3 + 5 - 6 (3 marks)

Solution:

(i) -9 + 13 = 4

(ii) 7 - 12 = -5

(iii) -3 + 5 = 2, 2 - 6 = -4

5)Team A scored: +45, -20, +35

Team B scored: -10, +50, -25

Calculate total for each team and find the difference. (3 marks)

Solution:

Team A: 45 - 20 + 35 = 60

Team B: -10 + 50 - 25 = 15

Difference: 60 - 15 = 45 points (Team A leads)

SECTION –D

Answer the following [4 marks]

1)In a game, Team A scored +40 points and Team B scored -25 points in first round. In second round, Team A lost 15 points and Team B gained 30 points. What is the final score difference between the two teams? (4 marks)

Solution:

Team A: +40 - 15 = +25

Team B: -25 + 30 = +5

Difference: 25 - 5 = 20 points (Team A leads by 20)

2)Start from 0 on a number line. Perform these movements:

Move 6 units right, then 10 units left, then 5 units right. Find the final position. (4 marks)

Solution:

0 + 6 = +6

6 - 10 = -4

-4 + 5 = +1

Final position: +1

3)Compare using <, > or = and give reason:

(i) -25 ___ -17
(ii) 0 ___ -35
(iii) |-18| ___ |18|
(iv) -40 ___ 10 (4 marks)
Solution:
(i) -25 < -17 (because 25 > 17)
(ii) 0 > -35 (zero > every negative)
(iii) |-18| = |18|
(iv) -40 < 10 (negative < positive
4)Arrange the following in ascending and descending order:
-42, 25, -8, 0, -19, 15, -5 (4 marks)
Solution:
Ascending: -42, -19, -8, -5, 0, 15, 25
Descending: 25, 15, 0, -5, -8, -19, -42
5)Draw a number line and mark the integers -8, -3, 0, 5, 7.
Answer the following:
(i) Which is the largest and smallest?
Largest Integer: 7
Smallest Integer: -8
(ii) How many integers are between -8 and 5?
Total number of integers = 12
Step-by-step calculation:
Numbers from -7 to 4 (excluding -8 and 5)
= 4 - (-7) + 1 = 4 + 7 + 1 = 12
(iii) What is the predecessor of -3? (4 marks)
predecessor of -3 = -3 - 1 = -4
Location on Number Line:
-4 lies just to the left of -3.