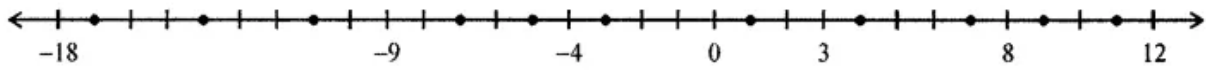
Q1. Some integers are marked on the following number line:



(i) Write these integers in ascending order.
(ii) Write these integers in descending order.
(iii) Few dots have been marked on the above number line. Write an appropriate integer at each dot.

Answer:

(i) Given integers in ascending order = – 18, – 9, – 4, 0, 3, 8, 12

(ii) Given integers in descending order = 12, 8, 3, 0, -4, -9, -18

(iii) A few dots have been marked on the above number line,

So, integers at each dot = – 17, -14, -11, – 7, -5, -3, 1, 4, 7, 9, 11

Q2. In a quiz, positive marks are given for correct answers, and negative marks are given for incorrect answers. If Rohit's scores in five successive rounds were 15, -3, -7, 12, and 8, what was his total at the end?

Answer:

From the question, it is given that,

Rohit's scores in five successive rounds were 15, -3, -7, 12 and 8

We have to find his total at the end,

Then,

= 15 – 3 – 7 + 12 + 8

= 15 + 12 + 8 – 3 – 7

= 35 – 10

= 25

Therefore, Rohit's total score is 25.

Q3. Evaluate the following:
(i) |-13| – |9|
(ii) |13 – 5| – |-9|
(iii) |35 – 21| – |8 – 3|
Answer:

(i) |-13| – |9| = 13 – 9 = 4
(ii) |13 – 5| – |-9| = |8| – |-9| = 8 – 9 = -1
(iii) |35 – 21| – |8 – 3| = |14| – |5| = 14 – 5 = 9

Q4. Verify the following:
(i) 37 × [6 + (-3)] = 37 × 6 + 37 × (-3)
(ii) (-21) × [(-6) + (-4)] = (-21) × (-6) + (-21) × (-4)
Answer:

(i) 37 × [6 + (-3)] = 37 × 6 + 37 × (-3)
LHS = 37 × [6 – 3] = 37 × 3 = 111
RHS = 37 × 6 + 37 × (-3) = 222 – 111 = 111
LHS = RHS

(ii) (-21) × [(-6) + (-4)] = (-21) × (-6) + (-21) × (-4)
LHS = (-21) × [(-6) + (-4)] = -21 × [-6 – 4] = (-21) × (-10) = +210
RHS = (-21) × (-6) + (-21) × (-4) = 126 + 84 = 210
LHS = RHS

Q5. Find the sum of integers -72, 237, 84, 72, -184, -37.
Answer:

Sum of integers -72, 237, 84, 72, -184, -37
= -72 + 237 + 84 + 72 + -184 + -37
= 237 + 84 + 72 + (-72 – 184 – 37)
= (393) + (-293)
= 393 – 293
= 100

Q6. $7 - 8 \div (-2) + 3 \times (-4)$

Answer:

$7 - 8 \div (-2) + 3 \times (-4)$

$= 7 + \frac{-8}{-2} + 3 \times (-4)$

$= 7 + 4 + 3 \times (-4)$ (Use of BODMAS)

$= 7 + 4 - 12$

$= 11 - 12$

$= -1$

Q7. Use the sign >, < or = in the box to make the following statements true:

(i) (-11) + (-7) ……. (-11) – (-7)

(ii) 23 – 41 + 11 …… 23 – 41 – 11

(iii) 40 – (-39) + (-5) …….. 40 + (-39) – (-5)

(iv) (-3) + 13 – (15) ……. 25 – (-2) + (-33)

Answer:

(i) (-11) + (-7) ..... (-11) – (-7)

⇒ -18 < -11 + 7 = -4

(ii) 23 – 41 + 11 ..... 23 – 41 – 11

⇒ 34 – 41 ..... 23 – 52

⇒ -9 > -19

(iii) 40 – (-39) + (-5) ..... 40 + (-39) – (-5)

⇒ 40 + 39 – 5 ..... 40 – 39 + 5

⇒ 79 – 5 ..... 45 – 39

⇒ 74 > 6

(iv) (-3) + 13 – (15) ..... 25 – (-2) + (-33)

⇒ -3 + 13 – ..... 25 + 2 – 33

⇒ 13 – 18 ..... 27 – 33

⇒ -5 > -6

Q8. In a quiz, team A scored -30, 20, 0 and team B scored 20, 0, -30 in three successive rounds. Which team scored more? Can we say that we can add integers in any order?

Answer:

In a quiz,

Team A scored -30, 20, 0 and

Team B scored 20, 0, -30 in three rounds

Sum of scores of A team = -30 + 20 + 0 = -10

Sum of scores of B team = 20 + 0 – 30 = -10

The scores of both the team are equal i.e. -10

Yes, by adding the scores in any order, the result will be the same.

Q9. Verify that (a ÷ b) ÷ c ≠ a ÷ (b ÷ c) for a = -225, b = 15 and c = -3.

Answer:

$$\text{LHS} = (a \div b) \div c = \frac{a}{b} \div c = \frac{a}{bc}$$

$$\text{RHS} = a \div (b \div c) = a \div \frac{b}{c} = a \times \frac{c}{b} = \frac{ac}{b}$$

$\therefore$ LHS $\neq$ RHS

$a = -225, b = 15, c = -3$

$$\therefore \text{LHS} = (a \div b) \div c = \frac{-225}{15} \div (-3)$$

$$= (-15) \div (-3) = \frac{-15}{-3} = 5$$

$$\text{RHS} = a \div (b \div c) = -225 \div [15 \div (-3)]$$

$$= -225 \div \left(\frac{15}{-3}\right) = (-225) \div (-5)$$

$$= \frac{-225}{-5} = 45$$

$\therefore$ LHS $\neq$ RHS