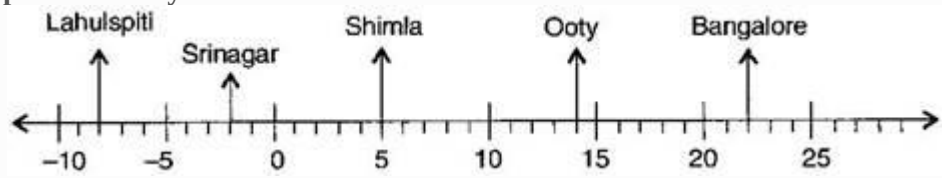
SUB- MATHS

CLASS-7 **SAMPLE NOTEBOOK(EX 1.1,1.2 OF INTEGERS)**

Question 1
Following number line shows the temperature in degree Celsius {∘∘C} at different places on a particular day:



(a) Observe this number line and write the temperature of the places marked on it.

(b) What is the temperature difference between the hottest and the coldest places among the above?

(c) What is the temperature difference between Lahulspiti and Srinagar?

(d) Can we say temperature of Srinagar and Shimla taken together is less than the temperature at Shimla? Is it also less than the temperature at Srinagar?

Answer:
(a) The temperature of the places marked on it is:

Places	**Temperature**
Bangalore	22^oC
Ooty	13^oC
Shimla	5^oC
Srinagar	$–2^oC$
Lahulspiti	$–8^oC$

(b) The temperature of the hottest place Bangalore = 22Ctemperature of the coldest place Lahulspiti = $–8^oC$
Difference = $22^oC – (–8^oC) = 30^oC$
(c)The temperature of Srinagar = –2C

The temperature of Lahulspiti = $-8^{o}C$
Difference = $-2^{o}C + (-8^{o}C) = 6^{o}C$
(d)The temperature of Srinagar and Shimla = $5^{o}C + (-2^{o}C) = 5^{o}C - 2^{o}C = 3^{o}C$
The temperature at Shimla = $5^{o}C$
Therefore, $3^{o}C < 5^{o}C$
Thus, temperature of Srinagar and Shimla taken together is less than the temperature at Shimla.

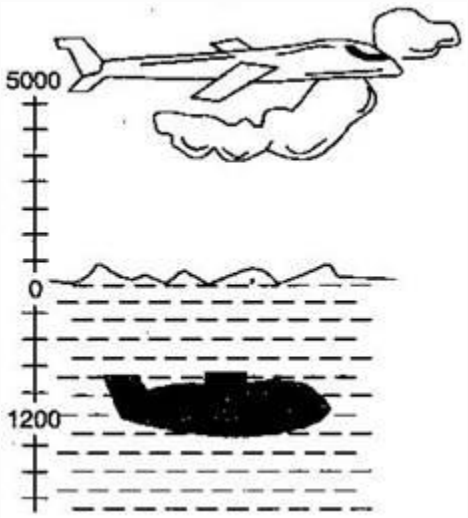
Now, Temperature of Srinagar = $-2^{o}C$
Therefore, $3^{o}C > -2^{o}C$
No, it is not less than the temperature at Srinagar.

Question 2.In a quiz, positive marks are given for correct answers and negative marks are given for incorrect answers. If jack's scores in five successive rounds were $25,-5,-10,15$25,–5,–10,15**and 10, what was his total at the end?**
Answer:
Jack's scores in five successive rounds are $25,-5,-10,15$25,–5,–10,15 and $10.$10.
Total marks got by Jack = $25+(-5)+(-10)+15+10$25+(–5)+(–10)+15+10
= 25 – 15 + 25 = 35

Thus, 35 marks are got by Jack in a quiz.

Question 3.At Srinagar temperature was $-5^{\circ}-5^{\circ}$**C on Monday and then it dropped by** $2^{\circ}2^{\circ}$**C on Tuesday. What was the temperature of Srinagar on Tuesday? On Wednesday, it rose by** $4^{\circ}4^{\circ}$**C. What was the temperature on this day?**
Answer:
On Monday, temperature at Srinagar = $-5^{o}C$
On Tuesday, temperature dropped = $2^{o}C$
∴∴ Temperature on Tuesday = $-5^{o}C - 2^{o}C = -7^{o}C$
On Wednesday, temperature rose up = $4^{o}C$
∴∴ Temperature on Wednesday = $-7^{o}C + 4^{o}C = -3^{o}C$
Thus, temperature on Tuesday and Wednesday was $-7^{o}C$and $-3^{o}C$respectively.

Question 4.A plane is flying at the height of 5000 m above the sea level. At a particular point, it is exactly above a submarine floating 1200 m below the sea level. What is the vertical distance between them?



Answer:
Height of a place above the sea level = 5000 m

Floating a submarine below the sea level = 1200 m

∴∴ The vertical distance between the plane and the submarine = 5000 + 1200 = 6200 m
Thus, the vertical distance between the plane and the submarine is 6200 m.

Question 5. Mohan deposits Rs. 2,000 in his bank account and withdraws Rs. 1,642 from it, the next day. If withdrawal of amount from the account is represented by a negative integer, then how will you represent the amount deposited? Find the balance in Mohan's accounts after the withdrawal?
Answer:
Deposit amount = Rs. 2,000 and Withdrawal amount = Rs. 1,642

∴∴ Balance = 2,000 – 1,642 = Rs. 358
Thus, the balance in Mohan's account after withdrawal is Rs. 358.

According to the number line, Rita moves towards east is represented by a positive integer. But she moves in opposite direction means Rita moves west, is represented by negative integer.

Distance from A to B = 20 km

Distance from B to C = 30 km

Distance from A to C = 20 – 30 = –10 km

Thus, Rital is at final position from A to C is –10 km.

Question 6.Rita goes 20 km towards east from a point A to the point B. From B, she moves 30 km towards west along the same road. If the distance towards east is represented by a positive integer then, how will you represent the distance travelled towards west? By which integer will you represent her final position from A?
Answer:
(i) Taking rows 5 + (–1) + (–4) = 5 – 5 = 0

(–5) + (–2) + 7 = –7 + 7 = 0

0 + 3 + (–3) = 3 – 3 = 0

Taking columns 5 + (–5) + 0 = 5 – 5 = 0

(–1) + (–2) + 3 = –3 + 3 = 0

(–4) + 7 + (–3) = 7 – 7 = 0

Taking diagonals 5 + (–2) + (–3) = 5 – 5 = 0

(–4) + (–2) + 0 = –6

This box is not a magic square because all the sums are not equal.

(ii) Taking rows 1 + (–10) + 0 = 1 – 10 = –9

(–4) + (–3) + (–2) = –7 – 2 = –9

(–6) + 4 + (–7) = –2 – 7 = –9

Taking columns 1 + (–4) + (–6) = 1 – 10 = –9

(–10) + (–3) + 4 = –13 + 4 = –9

0 + (–2) + (–7) = 0 – 9 = –9

Taking diagonals 1 + (–3) + (–7) = 1 – 10 = –9

0 + (–3) + (–6) = –9

This box is magic square because all the sums are equal.

Question 7.In a magic square each row, column and diagonal have the same sum. Check which of the following is a magic square.
(i)

55	–1–1	–4–4
–5–5	–2–2	77
00	33	–3–3

(ii)

11	–10–10	00
–4–4	–3–3	–2–2
–6–6	44	–7–7

Answer:
(i) Given: $a=21, b=1$
We have $a–(–b)=a+b$
Putting the values in L.H.S. = $a–(–b)=21–(–18)$ = 21 + 18 = 39
Putting the values in R.H.S. = $a+b$ = 21 + 19 = 39
Since, L.H.S. = R.H.S Hence, verified.

(ii) Given: $a=118, b=125$
We have $a–(–b)=a+b$
Putting the values in L.H.S. = $a–(–b)=118–(–125)$= 118 + 125 = 243
Putting the values in R.H.S. = $a+b$ = 118 + 125 = 243
Since, L.H.S. = R.H.S Hence, verified.

(iii) Given: $a=75, b=84$
We have $a–(–b)= a+b$
Putting the values in L.H.S. = $a–(–b)=75–(–84)$ = 75 + 84 = 159
Putting the values in R.H.S. = $a+b$ = 75 + 84 = 159
Since, L.H.S. = R.H.S Hence, verified.

(iv) Given: $a=28, b=11$
We have $a–(–b)=a+b$
Putting the values in L.H.S. = $a–(–b)= 28–(–11)$ = 28 + 11 = 39
Putting the values in R.H.S. = $a+b$ = 28 + 11 = 39

Since, L.H.S. = R.H.S Hence, verified.

EXERCISE-1.2

Question 1.Write down a pair of integers whose:

(a) sum is –7

(b) difference is –10

(c) sum is 0

Answer:

(a) One such pair whose sum is –7: –5+(–2)= –7

(b) One such pair whose difference is –10: –2–8= –10

(c) One such pair whose sum is 0: –5+5=0

Question 2.(a) Write a pair of negative integers whose difference gives 8.

(c) Write a negative integer and a positive integer whose is –5..

(d) Write a negative integer and a positive integer whose difference is –3.

Answer:

(a) –2–(–10) –2+10=8

(b) (–7)+2= –5

(c) (–2)–1= –2–1= –3

Question 3.In a quiz, team A scored –40,10,0–40,10,0 **and team B scores 10, 0,** –40–40 **in three successive rounds. Which team scored more? Can we say that we can add integers in any order?**
Answer:
Team A scored –40,10,0 –40,10,0
Total score of Team A = –40+10+0= –30
Team B scored 10,0,–40 10,0,–40
Total score of Team B = 10+0+(–40)=10+0–40=–30
Thus, scores of both teams are same.

Yes, we can add integers in any order due to commutative property.

Question 4.Fill in the blanks to make the following statements true:
(i)(–5)+(–8)=(–8)+(…….)

(ii)–53+…….= –53

(iii)17 + ……. = 0

(iv)[13+(–12)]+(…….)=13+[(–12)+(–7)]

(v)(–4)+[15+(–3)]=[–4+15]+…….
Answer:
(i) (–5)+(–8)=(–8)+(–5) [Commutative property]

(ii) –53+0 = –53 [Zero additive property]

(iii) 17+(–17)−−−−−=0 (Additive identity]

(iv)[13+(12)]+(–7)−−−−=13+[(–12)+(–7)] [Associative property]

(–4)+[15+(–3)]=[–4+15]+(–3)−−−− [Associative property]

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