Rs Aggrawal Solutions for Class 6 Maths Chapter 4 Integers

ANSWER:

(i) A decrease of 8
(ii) A gain of Rs 7
(iii) Losing a weight of 5 kg
(iv) 10 km below the sea level
(v) 5°C above the freezing point
(vi) A withdrawal of Rs 100
(vii) Spending Rs 500
(viii) Going 6 m to the west
(ix) The opposite of 24 is -24.
(x) The opposite of -34 is 34.

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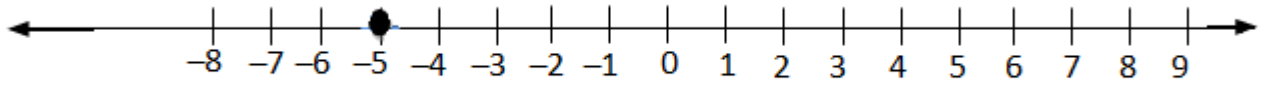
ANSWER:

(i) +Rs 600
(ii) -Rs 800
(iii) -7°C
(iv) -9
(v) +2 km
(vi) -3 km
(vii) + Rs 200
(viii) -Rs 300

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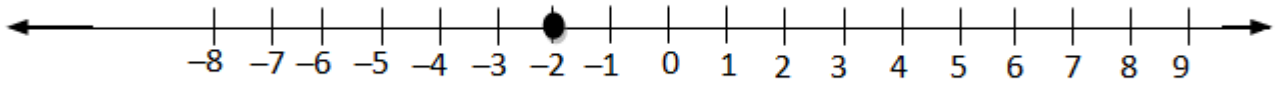
ANSWER:

(i) -5

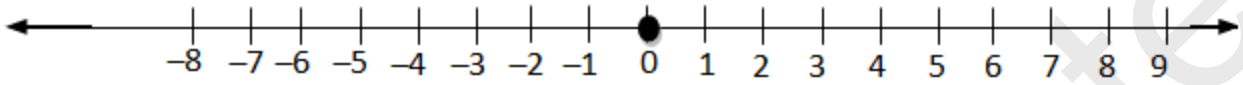


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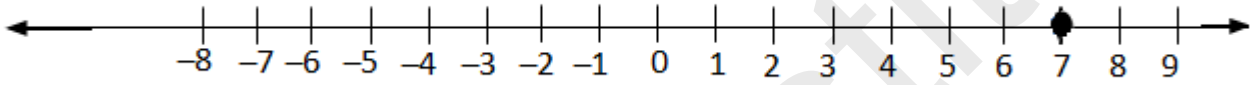
(ii) -2



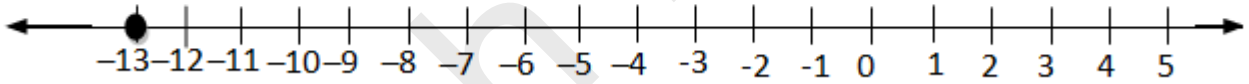
(iii) 0



(iv) 7



(v) -13



Page No 64:

ANSWER:

(i)0, -2
0 > -2
This is because zero is greater than every negative integer.

(ii) -3, -5
-3 > -5
Since 3 is smaller than 5, -3 is greater than -5.

(iii) -5, 2
2 > -5
This is because every positive integer is greater than every negative integer.

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(iv) -16, 8
8 > -16
This is because every positive integer is greater than every negative integer.
v) -365, -913
-365 > -913
Since 365 is smaller than 913, -365 is greater than -913.
vi) -888, 8
8 > -888
This is because every positive integer is greater than every negative integer.

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ANSWER:

i) -7 < 6
This is because every positive integer is greater than every negative integer.
ii) -1 < 0
This is because zero is greater than every negative integer.
iii) -27 < -13
Since 27 is greater than 13, -27 is smaller than -13.
iv) -26 < 17
This is because every positive integer is greater than every negative integer.
v) -603 < -317
Since 603 is greater than 317, -603 is smaller than -317.
vi) -777 < 7
This is because every positive integer is greater than every negative integer.

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ANSWER:

i) 1, 2, 3, 4, 5

ii) -4, -3, -2, -1

iii) -2, -1, 0, 1, 2

iv) -6

Page No 64:

ANSWER:

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i) 0 < 7
This is because 0 is less than any positive integer.
ii) 0 > -3
This is because 0 is greater than any negative integer.
iii) -5 < -2
Since 5 is greater than 2, -5 is smaller than -2.
iv) -15 < 13
This is because every positive integer is greater than every negative integer.
v) -231 < -132
Since 231 is greater than 132, -231 is smaller than -132.
vi) -6 < 6
This is because every positive integer is greater than every negative integer.

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ANSWER:

i) -7 < -2 < 0 < 5 < 8
ii) -100 < -23 < -6 < -1 < 0 < 12
iii) -501 < -363 < -17 < 15 < 165
iv) -106 < -81 < -16 < -2 < 0 < 16 < 21

Page No 64:

ANSWER:

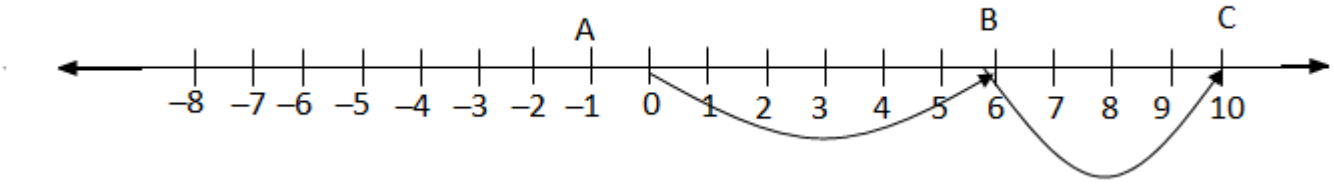
i) 36 > 7 > 0 > -3 > -9 > -132
ii) 51 > 0 > -2 > -8 > -53
iii) 36 > 0 > -5 > -71 > -81
iv) 413 > 102 > -7 > -365 > -515

Page No 64:

ANSWER:

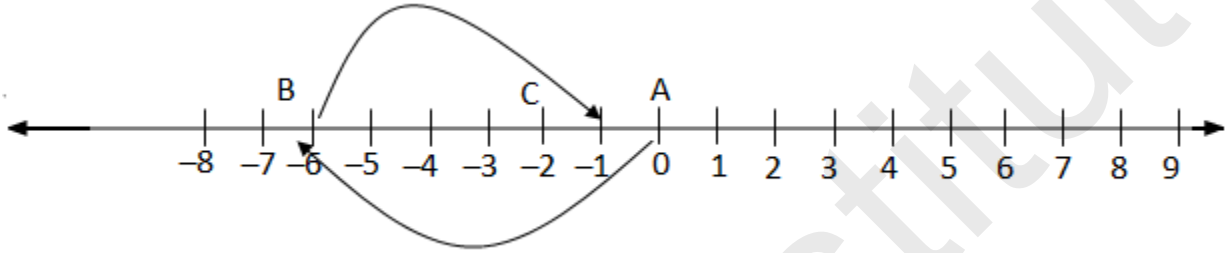
i) 4 more than 6
We want an integer that is 4 more than 6. So, we will start from 6 and proceed 4 steps to the right to obtain 10.

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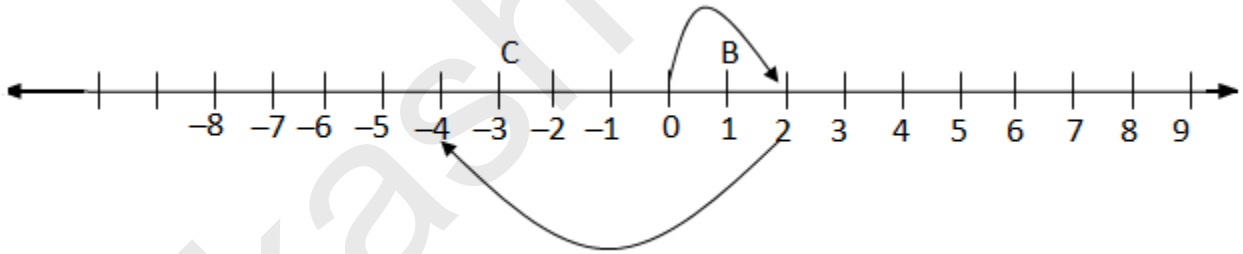
ii) 5 more than -6

We want an integer that is 5 more than -6. So, we will start from -6 and proceed 5 steps to the right to obtain -1.



iii) 6 less than 2

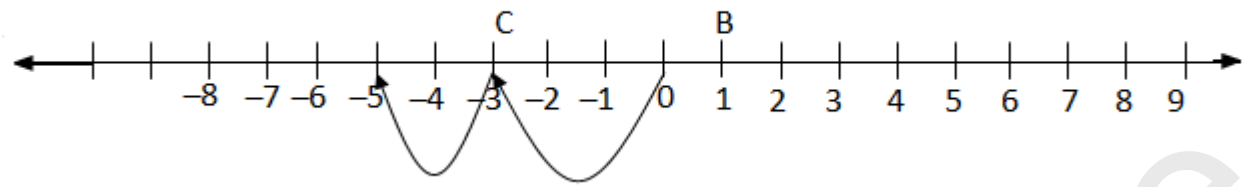
We want an integer that is 6 less than 2. So, we will start from 2 and proceed 6 steps to the left to obtain -4.



iv) 2 less than -3

We want an integer that is 2 less than -3. So, we will start from -3 and proceed 2 steps to the left to obtain -5

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ANSWER:

i) False
This is because 0 is greater than every negative integer.

ii) False
0 is an integer as we know that every whole number is an integer and 0 is a whole number.

iii) True
0 is an integer that is neither positive nor negative. So, the opposite of zero is zero.

iv) False
Since 10 is greater than 6, -10 is smaller than -6.

v) True
This is because an absolute value is a positive number. For example, -2 is an integer, but its absolute value is 2 and it is greater than -2.

vi) True
This is because all negative integers are to the left of 0.

vii) True
This is because natural numbers are positive and every positive integer is greater than every negative integer.

viii) False
This is because the successor of -187 is equal to -186 (-186 + 1). In succession, we move from the left to the right along a number line.

ix) False
This is because the predecessor of -215 is -216 (-216 - 1). To find the predecessor, we move from the right to the left along a number line.

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ANSWER:

i) The value of |-9| is 9
ii) The value of |-36| is 36
iii) The value of |0| is 0
iv) The value of |15| is 15
v) The value of |-3| is 3
∴∴ -|-3| = -3
vi) 7 + |-3|
= 7 + 3 (The value of |-3| is 3)
= 10
vii) |7 - 4|
= |3|
= 3 (The value of |3| is 3)

viii) 8 - |-7|
= 8 - 7 (The value of |-7| is 7)
= 1

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ANSWER:

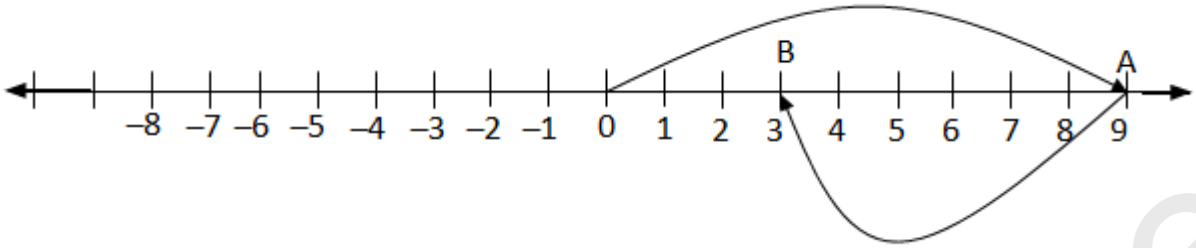
i) Every negative integer that is to the right of -7 is greater than -7.
So, five negative integers that are greater than -7 are -6, -5, -4, -3, -2 and -1.
ii) Every negative integer that is to the left of -20 is less than -20.
So, five negative integers that are less than -20 are -21, -22, -23, -24 and -25.

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ANSWER:

i) On the number line, we start from 0 and move 9 steps to the right to reach a point A. Now, starting from A, we move 6 steps to the left to reach point B.

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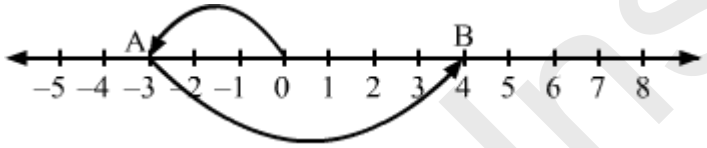
B represents the integer 3.

∴∴ 9 + (−6) = 3

(ii) On the number line, we start from 0 and move 3 steps to the left to reach point A. Now, starting from A, we move 7 steps to the right to reach point B.

B represents the integer 4.

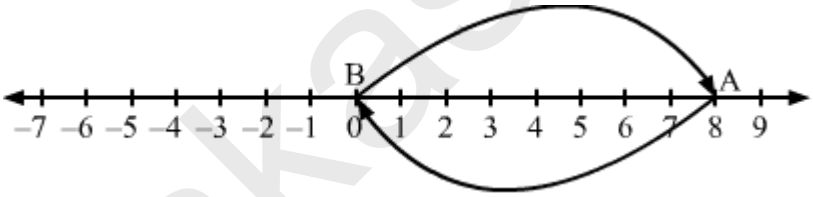
∴∴ (−3) + 7 = 4



(iii) On the number line, we start from 0 and move 8 steps to the right to reach point A. Now, starting from A, we move 8 steps to the left to reach point B.

B represents the integer 0.

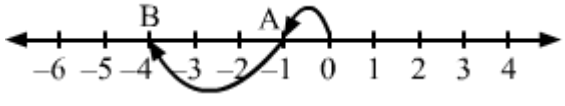
∴∴ 8 + (−8) = 0



(iv) On the number line, we start from 0 and move 1 step to the left to reach point A. Now, starting from A, we move 3 steps to the left to reach point B.

B represents the integer −4.

∴∴ (−1) + (−3) = −4

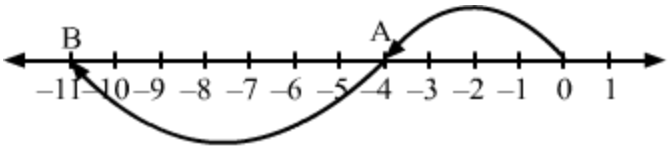


(v) On the number line, we start from 0 and move 4 steps to the left to reach point A. Now, starting from A, we move 7 steps to the left to reach point B.

B represents the integer −11.

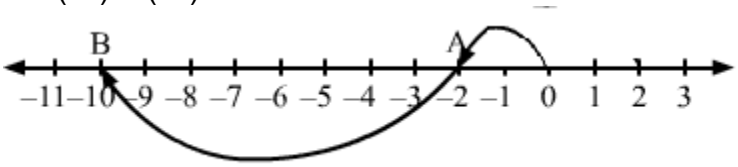
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∴∴ (−4) + (−7) = −11



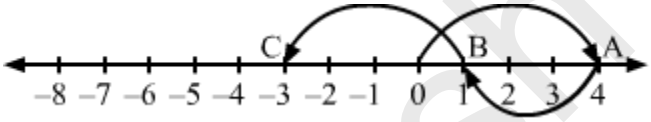
(vi) On the number line, we start from 0 and move 2 steps to the left to reach point A.
Now, starting from A, we move 8 steps to the left to reach point B.
B represents the integer −10.

∴∴ (−2) + (−8) = −10



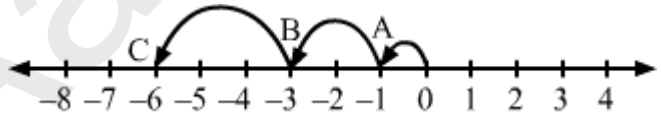
(vii) On the number line, we start from 0 and move 3 steps to the right to reach point A.
Now, starting from A, we move 2 steps to the left to reach point B. Again, starting from B, we move 4 steps to the left to reach point C.
C represents the integer −3.

∴∴ 3 + (−2) + (−4) = −3



(viii) On the number line, we start from 0 and move 1 step to the left to reach point A.
Now, starting from A, we move 2 steps to the left to reach point B. Again, starting from B, we move 3 steps to the left to reach point C.
C represents the integer −6.

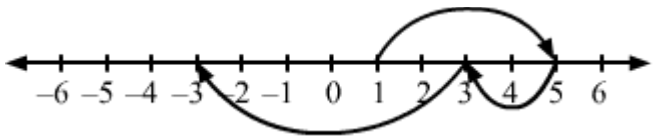
∴∴ (−1) + (−2) + (−3) = −6



(ix) On the number line, we start from 0 and move 5 steps to the right to reach point A.
Now, starting from A, we move 2 steps to the left to reach point B. Again, starting from B, we move 6 steps to the left to reach point C.
C represents the integer −3.

∴∴ 5 + (−2) + (−6) = −3

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ANSWER:

(i)
(−3) + (−9)
= −3 − 9
= −12

(ii)
(−7) + (−8)
= −7 − 8
= −15

(iii)
(−9) + 16
= −9 + 16
= 7

(iv)
(−13) + 25
= −13 + 25
= 12

(v)
8 + (−17)
= 8 − 17
= −9

(v)
2 + (−12)
= 2 − 12
= −10

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ANSWER:

(i)
−365 −87−452−365 −87−452
−365
−365 −87 −365 −87-365 and -87 are both negative integers. So, we add 365 and 87, and put the negative sign before the sum.

(ii)
−687 −73−760−687 −73−760
-687 and -73 are both negative integers. So, we add 365 and 87, and put the negative sign before the sum.

(iii)
−1065 −987−2052−1065 −987−2052
-1065 and -987 are both negative integers. So, we add 1065 and 987, and put the negative sign before the sum.

(iv)
−3596−1089−4685−3596−1089−4685
-3596 and -1089 are both negative integers. So, we add 3596 and 1089, and put the negative sign before the sum.

Page No 68:

ANSWER:

i)
−206 +98−108 Since we are adding a negative number with a positive number,we shall subtract the smaller number, i.e. 98 from the greater number, i.e. 206206 − 98 = 108
Since the greater number is negative, the sign of the result will be negative. So, th e answer will be −108−206 +98−108 Since we are adding a negative number with a posi tive number,we shall subtract the smaller number, i.e. 98 from the greater number, i.e. 206 206 - 98 = 108 Since the greater number is negative, the sign of the result will be negati ve. So, the answer will be -108

ii)
178 -69 109 178 -69 109
Since we are adding a negative number with a positive number,we shall subtract the s maller number, i.e. 69, from the greater number, i.e. 178178 - 69 = 109 Since the gr eater number is positive, the sign of the result will be positive. So, the answer will b e 109Since we are adding a negative number with a positive number,we shall subtract the s maller number, i.e. 69, from the greater number, i.e. 178178 - 69 = 109 Since the greater

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number is positive, the sign of the result will be positive. So, the answer will be 109

(iii)

312 -103 209 312 -103 209
Since we are adding a negative number with a positive number,
we shall subtract the smaller number, i.e. -103, from the greater number, i.e. 312
312 - 103 = 209
Since the greater number is positive, the sign of the result will be positive.
So, the answer will be 209

(iv) −493+289−204(iv) −493+289−204

Since we are adding a negative number with a positive number,
we shall subtract the smaller number, i.e. 289, from the greater number, i.e. 493.
493 - 289 = 204
Since the greater number is negative, the sign of the result will be negative.
So, the answer will be -204

Page No 68:

ANSWER:

(i) 137 and −354−354+137−217(ii) 1001 and −131001−13988(iii) −3057 and 199−3057 199−2858(iv) −36 and 10273057−363021(v) −389 and −1032−1032−389−1421(vi) −36 and 100100−3664(vii) 3002 and −8883002−8882114(i) 137 and −354−354+137−217(ii) 1001 and −131001−13988(iii) −3057 and 199−3057 199−2858(iv) −36 and 10273057−363021(v) −389 and −1032−1032−389−1421(vi) −36 and 100100−3664(vii) 3002 and −8883002−8882114
(viii) −18, + 25 and −37
25 + (−18) + (−37)
= 25 – (18 + 37)
= 25 – 55
= –30

(ix) −312, 39 and 192
39 + 192 + (−312)
= 39 + 192 - 312
= 231 −312

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$= -81$

(x) $-51, -203, 36$ and -28

$36 + (-51) + (-203) + (-28)$

$= 36 - (51 + 203 + 28)$

$= 36 - 282$

$= -246$

Page No 68:

ANSWER:

(i) $-57 + 57 = 0$

So, the additive inverse of -57 is 57.

(ii) $183 - 183 = 0$

So, the additive inverse of 183 is -183.

(iii) $0 + 0 = 0$

So, the additive inverse of 0 is 0.

(iv) $-1001 + 1001 = 0$

So, the additive inverse of -1001 is 1001.

(v) $2054 - 2054 = 0$

So, the additive inverse of 2054 is -2054

Page No 68:

ANSWER:

(i) The successor of 201:

$201 + 1 = 202$

(ii) The successor of 70:

$70 + 1 = 71$

(iii) The successor of -5:

$-5 + 1 = -4$

(iv) The successor of -99:

$-99 + 1 = -98$

(v) The successor of -500:

$-500 + 1 = -499$

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ANSWER:

(i) The predecessor of 120:
120 − 1 = 119
(ii) The predecessor of 79:
79 − 1 = 78
(iii) The predecessor of −8:
−8 − 1 = −9
(iv) The predecessor of −141:
−141 − 1 = −142
(v) The predecessor of −300:
−300 − 1 = −301

Page No 69:

ANSWER:

(i) (−7) + (−9) + 12 + (−16)
= 12 − (7 + 9 + 16)
= 12 − 32
= −20

(ii) 37 + (−23) + (−65) + 9 + (−12)
= 37 + 9 − (23 + 65 + 12)
= 46-100
= −54

(iii) (−145) + 79 + (−265) + (−41) + 2
= 79 +2 − (145 + 265 + 41)
= 81 − 451
= −370

(iv) 1056 + (−798) + (−38) + 44 + (−1)
= 1056 + 44 − (798 + 38 + 1)
= 1100 − 837
= −263

Page No 69:

ANSWER:

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Let the distance covered in the direction of north be positive and that in the direction of south be negative.

Distance travelled to the north of Patna = 60 km
Distance travelled to the south of Patna = -90 km
Total distance travelled by the car = 60 + (-90)
= -30 km
The car was 30 km south of Patna.

Page No 69:

ANSWER:

Total cost price = Price of pencils + Price of pens
= 30 + 90 + 25
= Rs 145

Total amount sold = Price of pen + Price of pencils
= 20 + 70
= 90
Selling price - costing price = 90 —- 145
= —-55
The negative sign implies loss.
Hence, his net loss was Rs 55.

Page No 69:

ANSWER:

(i) True
For example: - 2 + (-1) = -3

(ii) False
It can be negative or positive.
For example: -2 + 3 = 1 gives a positive integer, but -5 + 2 = -3 gives a negative integer.

(iii) True
For example: 100 + (-100) = 0

(iv) False
For example: (-5) + 2 + 3 = 0

(v) False

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|-5| = 5 and | -3 | = 3, 5 > 3

(vi) False

$|8 - 5| = 3$

$|8| + |-5| = 8 + 5$

$= 13$

$\therefore\therefore |8 - 5| \neq\neq |8| + |-5|$

Page No 69:

ANSWER:

(i) $a + 6 = 0$

$\Rightarrow a = 0 - 6$

$\Rightarrow a = -6$

(ii) $5 + a = 0$

$\Rightarrow a = 0 - 5$

(iii) $a + (-4) = 0$

$\Rightarrow a = 0 - (-4)$

$\Rightarrow a = 4$

(iv) $-8 + a = 0$

$\Rightarrow a = 0 + 8$

$\Rightarrow a = 8$

Page No 70:

ANSWER:

(i) $-34 - 18$

$= -52$

(ii) $25 - (-15)$

$= 25 + 15$

$= 40$

(iii) −28 from −43

$= -43 - (-28)$

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= −43 + 28
= −15

(iv) 68 from −37
= −37 − 68
= −105
(v) 219 from 0
= 0 − 219
= −219

(vi) −92 from 0
= 0 − (−92)
= 0 + 92
= 92

(vii) −135 from −250
= −250 − (−135)
= −250 + 135
= −115

(viii) −2768 from −287
= −287 − (−2768)
= 2768 − 287
= 2481

(ix) 6240 from −271
= −271 − (6240)
= −271 − 6240
= −6511

(x) −3012 from 6250
= 6250 − (−3012)
= 6250 + 3012
= 9262

Page No 70:

ANSWER:

Sum of −1050 and 813:
−1050 + 813
= −237
Subtracting the sum of −1050 and 813 from −23:

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$-23 - (-237)$
$= -23 + 237$
$= 214$

Page No 70:

ANSWER:

Sum of 138 and -250:
$138 + (-250)$
$= 138 - 250$
$= -112$
Sum of 136 and -272:
$= 136 + (-272)$
$= 136 - 272$
$= -136$
Subtracting the sum of -250 and 138 from the sum of 136 and -272:
$-136 - (-112)$
$= -136 + 112$
$= -24$

Page No 70:

ANSWER:

Adding 33 and -47:
$33 + (-47)$
$= 33 - 47$
$= -14$

Subtracting -84 from -14:
$-14 - (-84)$
$= -14 + 84$
$= 70$

Page No 70:

ANSWER:

Difference of -8 and -68:
$-8 - (-68)$
$= -8 + 68$

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= 60

Adding -36 to 60:
−36 + 60
= 24

Page No 70:

ANSWER:

(i) [37 − (−8)] + [11 − (−30)]
= (37 + 8) + (11 + 30)
= 45 + 41
= 86

(ii) [−13 − (−17) + [−22 − (−40)]
= (−13 +17) + (-22 + 40)
= 4 + 18
= 22

Page No 70:

ANSWER:

No, they are not equal.

34 − (−72)
= 34 + 72
= 106

(−72) − 34
= −72 − 34
= −106

Since 106 is not equal to −106, the two expressions are not equal.

Page No 70:

ANSWER:

Let the other integer be x.
According to question, we have:
$x + 170 = -13$

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=> $x = -13 - 170$
=> $x = -183$
Thus, the other integer is -183.

Page No 70:

ANSWER:

Let the other integer be x.
According to question, we have:
$x + (-47) = 65$
=> $x - 47 = 65$
=> $x = 65 + 47$
=> $x = 112$
Thus, the other integer is 112.

Page No 70:

ANSWER:

(i) True
An integer added to an integer gives an integer.

(ii) True
An integer subtracted from an integer gives an integer.

iii) False
$-8 - (-7)$
$= -8 + 7$
$= -1$
Since 14 is greater than 1, -1 is greater than -14.

iv) True
$-5 - 2 = -7$
Since 8 is greater than 7, -7 is greater than -8.
$-7 > -8$

v) False
L.H.S.
$(-7) - 3 = -10$
R.H.S.
$(-3) - (-7)$
$= (-3) + 7$

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= 4
∴∴ L.H.S. ≠≠ R.H.S.

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ANSWER:

Let us consider the height above the sea level as positive and that below the sea level as negative.
∴∴ Height of point A from sea level = 5700 m
Depth of point B from sea level = -39600 m
Vertical distance between A and B = Distance of point A from sea level - Distance of point B from sea level
= 5700 - (-39600)
= 45300 m

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ANSWER:

Initial temperature of Srinagar at 6 p.m. = 1°C
Final temperature of Srinagar at midnight = −4°C
Change in temperature = Final temperature - Initial temperature
= (−4 − 1)°C
= −5°C
So, the temperature has changed by −5°C.
The negative sign indicates that the temperature has fallen.
So, the temperature has fallen by 5°C.

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ANSWER:

(i) 15 by 9
= 15 × 9
= 135

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(ii) 18 by −7
= –(18 × 7)
= –126

(iii) 29 by –11
= –(29 × 11)
= –319

(iv) –18 by 13
= –(18 × 13)
= –234

(v) –56 by 16
= –(56 × 16)
= –896

(vi) 32 by –21
= –(32 × 21)
= –672

(vii) –57 by 0
= –(57 × 0)
= 0

(viii) 0 by –31
= –(0 × 31)
= 0

(ix) –12 by –9
= (–12) × (– 9)
= 108

(x) (–746) by (–8)
= (–746) × (–8)
= 5968

(xi) 118 by −7
= 118 × (-7)
= –826

(xii) −238 by −143

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$= (-238) \times (-143)$
$= 34034$

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ANSWER:

(i) $(-2) \times 3 \times (-4)$
$= [(-2) \times 3] \times (-4)$
$= (-6) \times (-4)$
$= 24$

(ii) $2 \times (-5) \times (-6)$
$= [2 \times (-5)] \times (-6)$
$= (-10) \times (-6)$
$= 60$

(iii) $(-8) \times 3 \times 5$
$= [(-8) \times 3] \times 5$
$= (-24) \times 5$
$= -120$

(iv) $8 \times 7 \times (-10)$
$= [8 \times 7] \times (-10)$
$= 56 \times (-10)$
$= -560$

(v) $(-3) \times (-7) \times (-6)$
$= [(-3) \times (-7)] \times (-6)$
$= 21 \times (-6)$
$= -126$

(vi) $(-8) \times (-3) \times (-9)$
$= [(-8) \times (-3)] \times (-9)$
$= 24 \times (-9)$
$= -216$

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ANSWER:

(i) $18 \times (-27) \times 30$
$= (-27) \times [18 \times 30]$
$= (-27) \times 540$
$= -14580$

(ii) $(-8) \times (-63) \times 9$
$= [(-8) \times (-63)] \times 9$
$= 504 \times 9$
$= 4536$

(iii) $(-17) \times (-23) \times 41$
$= [(-17) \times (-23)] \times 41$
$= 391 \times 41$
$= 16031$

(iv) $(-51) \times (-47) \times (-19)$
$= [(-51) \times (-47)] \times (-19)$
$= 2397 \times (-19)$
$= -45543$

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ANSWER:

(i)
L.H.S.
$=18 \times [9 + (-7)]$
$= 18 \times [9 - 7]$
$= 18 \times 2$
$= 36$
R.H.S.
$=18 \times 9 + 18 \times (-7)$
$= 162 - (18 \times 7)$
$= 162 - 126$
$= 36$
$\therefore$ L.H.S = R.H.S
Hence, verified.

(ii) $(-13) \times [(-6) + (-19)] = (-13) \times (-6) + (-13) \times (-19)$
L.H.S.
$= (-13) \times [(-6) + (-19)]$

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= (–13) × [–6 – 19]
= (–13) × (–25)
= 325
R.H.S.
= (–13) × (–6) + (–13) × (–19)
= 78 + 247
= 325

∴∴ L.H.S = R.H.S
Hence, verified.

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ANSWER:

×	–3	–2	–1	0	1	2	3
–3	9	6	3	0	–3	–6	–9
–2	6	4	2	0	–2	–4	–6
–1	3	2	1	0	–1	–2	–3
0	0	0	0	0	0	0	0
1	–3	–2	–1	0	1	2	3
2	–6	–4	–2	0	2	4	6
3	–9	–6	–3	0	3	6	9

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ANSWER:

(i) The product of a positive integer and a negative integer is negative.
True

(ii) The product of two negative integers is a negative integer.
False
The product of two negative integers is always a positive integer.

(iii) The product of three negative integers is a negative integer.
True

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(iv) Every integer when multiplied by (–1) gives its multiplicative inverse.
False

Every integer when multiplied by (1) gives its multiplicative inverse.

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ANSWER:

(i) (–9) × 6 + (–9) × 4
Solution:
Using the distributive law:
(–9) × 6 + (–9) × 4
= (–9) × (6+9)
= (–9) × 10
= –90

(ii) 8 × (–12) + 7 × (–12)
Solution:
Using the distributive law:
8 × (–12) + 7 × (–12)
= (–12) × (8+7)
= (–12) × 15
= –180

(iii) 30 × (–22) + 30 × (14)
Solution:
Using the distributive law:
30 × (–22) + 30 × (14)
= 30 × [(–22) + 14]
= 30 × [–22 + 14]
= 30 × (–8)
= –240

(iv) (–15) × (–14) + (–15) × (–6)
Solution:
(–15) × (–14) + (–15) × (–6)
Using the distributive law:
= (–15) × [(–14) + (–6)]
= (–15) × [–14 – 6]
= (–15) × (–20)
= 300

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(v) 43 × (–33) + 43 × (–17)
Solution:
43 × (–33) + 43 × (–17)
Using the distributive law:
= (43) × [–(33) + (–17)]
= (43) × [–33 – 17]
= 43 × (–50)
= –2150

(vi) (–36) × (72) + (–36) × 28
Solution
(–36) × (72) + (–36) × 28
Using the distributive law:
= (–36) × (72 + 28)
= (–36) × 100
= –3600

(vii) (–27) × (–16) + (–27) × (–14)
Solution:
(–27) × (–16) + (–27) × (–14)
Using the distributive law:
= (–27) × [(–16) + (–14)]
= (–27) × [–16 –14]
= (–27) × [–30]
= 810

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ANSWER:

(i) 85 by –17

$= \frac{-85}{17} = -5$

(ii) –72 by 18

$= \frac{-72}{18} = -4$

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(iii) –80 by 16

$= \frac{-80}{16} -8016$
$= -5$
(iv) –121 by 11

$= \frac{-121}{11} -12111$
$= -11$

(v) 108 by –12

$= \frac{108}{-12} 108-12$
$= -9$
(vi) –161 by 23
$= \frac{-161}{23} -16123$
$= -7$
(vii) –76 by –19

$= \frac{-76}{-19} -76-19$
$= 4$
(viii) –147 by –21

$= \frac{-147}{-21} -147-21$
$= 7$
(ix) –639 by –71

$= \frac{-639}{-71} = 9 = -639-71 = 9$
(x) –639 by –71

$= \frac{-639}{-71} = 9 = -639-71 = 9$
(x) –15625 by –125

$= \frac{-15625}{-125} = 125 = -15625-125 = 125$

(xi) 2067 by –1

$= \frac{2067}{-1} = -2067 = 2067-1 = -2067$

(xii) 1765 by –1765

$= \frac{1765}{-1765} = -1 \times \frac{1765}{1765} = -1 \times 1 = -1 = 1765-1765 = -1 \times \frac{1765}{1765} = -1 \times 1 = -1$

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(xiii) 0 by –278

$=\frac{0}{-278}=0=0-278=0$

(xiv) 3000 by –100

$=\frac{3000}{-100}=-30=3000-100=-30$

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ANSWER:

(i) $80 \div (\underline{-16}) = -5$
(ii) $(-84) \div (\underline{12}) = -7$
(iii) $(\underline{-125}) \div (-5) = 25$
(iv) $(\underline{0}) \div (372) = 0$
(v) $(\underline{-186}) \div 1 = -186$
(vi) $(\underline{-34}) \div 17 = -2$
(vii) $(\underline{-165}) \div 165 = -1$
(viii) $(\underline{-73}) \div -1 = 73$
(ix) $1 \div (\underline{-1}) = -1$

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ANSWER:

(i) True
(ii) False
This is because we cannot divide any integer by 0. If we do so, we get the quotient as infinity.
(iii) True
(iv) False
This is because the division of any two negative integers always gives a positive quotient.
(v) True
(vi) True
(vii) True
(viii) True
(ix) False
This is because the division of any two negative integers always gives a positive quotient.

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ANSWER:

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(b) –4 < –3
Since 4 is greater than 3, –4 is less than –3.

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ANSWER:

(c) –5

2 less than –3 means the following:
= –3 – 2
= –5

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ANSWER:

c) –1

4 more than –5 means the following:
= –5 + 4
= –1

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ANSWER:

(a) –9

2 less than −7 means the following:
= −7 − 2
= −9

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ANSWER:

(b) 10
7 + |-3|
= 7 + (+ 3) (The absolute value of −3 is 3.)

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= 7 + 3
= 10

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ANSWER:

(c) –77
(−42) + (−35)
= −42 − 35
= −77

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ANSWER:

(b) –31
(−37) + 6
= −37 + 6
= −31

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ANSWER:

(c) 22
49 + (−27)
= 49 − 27
= 22

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ANSWER:

(c) –17

In succession, we move from the left to the right of the number line.

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ANSWER:

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(b) –17
To find the predecessor of a number, we move from the right to the left of a number line.

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ANSWER:

(a) 5
If we add the additive inverse of a number to the number, we get 0.
−5 + 5 = 0

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ANSWER:

(b) –7
−12 − (−5)
= −12 + 5
= −7

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ANSWER:

(b) 13.5 − (−8)
= 5 + 8
= 13

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ANSWER:

(c) –55
Let *x* be the other integer.
x + 30 = –25
⇒⇒ *x* = –25 – 30
⇒⇒ *x* = –55

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ANSWER:

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(a) 25

Let the other integer be x
$x + (-5) = 20$
$\Rightarrow\Rightarrow x - 5 = 20$
$\Rightarrow\Rightarrow x = 25$

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ANSWER:

(b) −21

Let the other integer be x.
$x + 8 = -13$
$\Rightarrow x = -13 - 8$
$\Rightarrow x = -21$

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ANSWER:

(b) 8

$0 - (-8)$
$= 0 + 8$
$= 8$

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ANSWER:

(c) 0

$8 + (-8)$
$= 8 - 8$
$= 0$

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ANSWER:

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(c) 1

(−6) + 4 − (−3)
= −6 + 4 + 3
= −6 + 7
= 1

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ANSWER:

(c) 10
6 − (−4)
= 6 + 4
= 10

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ANSWER:

(a) –20
(−7) + (−9) + 12 + (−16)
= −7 − 9 + 12 −16
= −20

Page No 76:

ANSWER:

(c) –12
–4 – 8
= –12

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ANSWER:

(c) 3

We have:
−6 − (−9)
= −6 + 9
= 3

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ANSWER:

(c) 15

We have:
$10 - (-5)$
$= 10 + 5$
$= 15$

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ANSWER:

(b) –54
We have:
$(-6) \times 9$
$= -(6 \times 9)$
$= -54$

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ANSWER:

(a) –90

$(-9) \times 6 + (-9) \times 4$
Using distributive law:
$(-9) \times (6 + 4)$
$= (-9) \times (10)$
$= -90$

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ANSWER:

(b) –4

$36 \div (-9)$

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$\frac{36}{-9} = \frac{369}{(-1)} = \frac{1}{(-1)} \times \frac{369}{} = -1 \times 4 = -4$ 36−9=369×(−1)= 1(−1)×369= −1 ×4= −436-9=369×(-1)= 1(-1)×369= -1 ×4= -4

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ANSWER:

The numbers ...–4, –3, –2, –1, 0, 1, 2, 3, 4... are integers.
The group of positive and negative numbers including 0 is called integers.

–5, –4, –3, –2, –1, 0, 1, 2, 3, 4, 5

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ANSWER:

(i) 0, –3
0
This is because 0 is greater than any negative integer.

(ii) –4, –6
–4
Since 6 is greater than 4, –4 is greater than –6.

(iii) –99, 9
9
This is because every positive integer is greater than any negative integer.

(iv) –385, –615
–385
Since 615 is greater than 385, –385 is greater than –615.

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ANSWER:

We can arrange the given integers in the increasing order in the following manner:
–36, –18, –5, –1, 0, 1, 8, 16

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ANSWER:

(i) $9 - |-6|$
$= 9 - (6)$
$= 9 - 6$
$= 3$

(ii) $6 + |-4|$
$= 6 + (4)$
$= 6 + 4$
$= 10$

(iii) $-8 - |-3|$
$= -8 - 3$
$= -11$

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ANSWER:

Four integers less than –6 (i.e. four negative integers that lie to the left of –6) are –7, –8, –9 and –10.
Four integers greater than –6 (i.e. four negative integers that lie to the right of –6) are –5, –4, –3 and –2.

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ANSWER:

(i) $8 + (-16)$
$= 8 - 16$
$= -8$

(ii) $(-5) + (-6)$
$= -5 - 6$
$= -11$

(iii) $(-6) \times (-8)$
$= (6 \times 8)$
$= 48$

(iv) $(-36) \div 6$
$-366 = (-1) \times 366 = -6$-366= (-1)×366= -6

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(v)
30 – (–50)
= 30 + 50
= 80

(vi) (–40) ÷ (–10)
=−40−10=(−1)×40(−1)×10=4=-40-10=(-1)×40(-1)×10=4

(vii) 8 × (–5)
= –(8 × 5)
= –40

(viii) (–30) – 15
= –30 – 15
= –45

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ANSWER:

Let the integer be x.
$\therefore\therefore 34 + x = -12$
or $x = -12 - 34$
or $x = -46$
Therefore, the other integer is –46.

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ANSWER:

(i) (–24) × (68) + (–24) × 32
= –(24) × (68+32)
= –24 × 100
= –2400

(ii) (–9) × 18 – (–9) × 8
= –(9) × [18 – 8]
= –9 × 10
= –90

(iii) (–147) ÷ (–21)

=−147−21=(−1)×147(−1)×21=(−1)(−1)×14721=7=-147-21=(-1)×147(-1)×21=(-1)(-1)×14721=7

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(iv) $16 \div (-1)$

$=\frac{16}{-1}=\frac{16\times(-1)}{(-1)\times(-1)}=16\times(-1)=-16$=16-1=16×(-1)(-1)×(-1)=16×(-1)=-16 {Multiplying the numerator and the denominator by (-1)}

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ANSWER:

(b) −88
The successor of −89 is −88. The successor of a number lies towards its right on a number line.
−88 lies to the right of −89.

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ANSWER:

(b) −100
The predecessor of a number lies to the left of the number.
−100 lies to the left of −99. Hence, −100 is a predecessor of −99.

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ANSWER:

(c) 23
Additive inverse of a number added to the number gives 0.
−23 + 23 = 0
Hence, 23 is the additive inverse of −23.

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ANSWER:

(b) >

Here, L.H.S. = $(-13 + 6)$
$= -7$

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R.H.S. = −25 − (−9)
= −25 + 9
= −16

−7 > −16

L.H.S. > R.H.S.

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ANSWER:

(c) 20

$x + (-8) = 12$
$\Rightarrow x - 8 = 12$
$\Rightarrow x = 12 + 8$
$\Rightarrow x = 20$

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ANSWER:

(c) -2

5 more than (−7) means 5 added to (−7).
5 + (−7)
= 5 − 7
= −2

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ANSWER:

(d) −47
Let the number to be added to 16 be x.
$x + 16 = (-31)$
$\Rightarrow x = (-31) - 16$
$\Rightarrow x = -47$

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ANSWER:

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(d) −70
−36 − 34
= −70

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ANSWER:

(i)
Let the required number be *x*.
$-23 - x = 15$
$\Rightarrow -23 = 15 + x$
$\Rightarrow 15 + x = -23$
$\Rightarrow x = -15 - 23$
$\Rightarrow x = -38$

(ii)
The largest negative integer is -1.

(iii)
The smallest positive integer is 1.

(iv)
$(-8) + (-6) - (-3)$
$= (-8) + (-6) + 3$
$= -8 - 6 + 3$
$= -11$

(v)
The predecessor of -200:
$(-200 - 1)$
$= -201$

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ANSWER:

(i) T
(ii) F

$-(-36) - 1$
$= 36 - 1$
$= 35$

(iii) F
This is because -10 is less than -6.

(iv) T

(v) T

$-|-15|$
$= -(15)$
$= -15$

(vi) F

$|-40| + 40$
$= 40 + 40$
$= 80$

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