

Integers

3. Integers. Exercise - 3.1

Solution-01:

- (i) Profit of ₹5000
- (ii) 30 km west of delhi
- (iii) 200 m below sea Level
- (iv) 325 AD
- (v) Earning ₹2700
- (vi) 25°C below freezing point.

Solution-02:

- (i) + 3kg
- (ii) + 1340
- (iii) -20°C
- (iv) - ₹470
- (v) + ₹2500
- (vi) - 240 m
- (vii) + 9320 m
- (viii) - 6 m

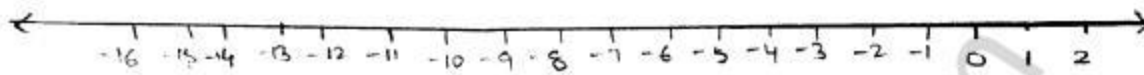
Solution-03:



- (i) 5 Right on the number Line
- (ii) 0
- (iii) -3
- (iv) 2

Solution-04:-

The number is to the Left of the other on the number line



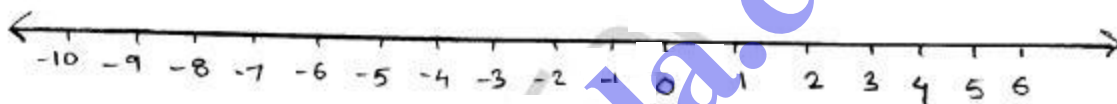
(i) -3

(ii) -5

(iii) -7

(iv) -16

Solution-05:-



(i) numbers between -9 and -2

-3, -4, -5, -6, -7, -8

(ii) Largest number (-2)

(iii) Smallest number (-8)

Solution-06:-

four consecutive integers just greater than -9

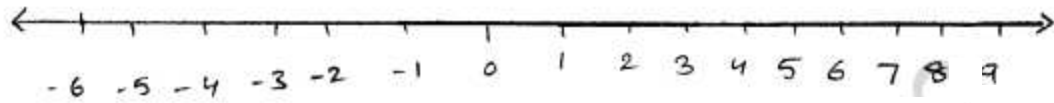
-8, -7, -6, -5

Solution-07:-

four consecutive integers just before -2

-6, -5, -4, -3

Solution -08:-



(i) if we move 6 units to the right of -1 is '5'

(ii) if we move 7 units to the left of 2 is '-5'

(iii) right

(iv) left.

Solution -09:-

(i) 4

(ii) -6

(iii) -5

(iv) -4.

Solution-10:-

$$(i) |13-5| = |8| \\ = 8$$

$$(ii) |5-13| = |-8| \\ = 8$$

$$(iii) |-11| + |9| = 11 + 9 \\ = 20$$

$$(iv) |-8| + |-6| = 8 + 6 \\ = 14$$

$$\begin{aligned} \text{Q) } |7| - |-3| &= 7 - 3 \\ &= 4 \end{aligned}$$

$$\begin{aligned} \text{Q) } |19| - |-13| \\ +19 - 13 &= 6. \end{aligned}$$

Solution-11:

$$\text{ci) } <$$

$$\text{cii) } >$$

$$\text{ciii) } >$$

$$\text{(iv) } <$$

$$\text{(v) } >$$

$$\text{(vi) } <$$

Solution-12:

(i) Ascending order

Small to Big

-9, -5, 0, 2, 3

Solution-12 (ii)

Ascending order -33, -31, -28, -4, -2, 9, 35.

Solution-13 (i)

(i) descending order

43, 25, 0, -5, -31, -37

(ii) descending order

95, 36, -3, -7, -8, -84, -101.

Solution-14:

(i) False

(ii) True

(iii) False

(iv) False

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Exercise-3.2

Solution-01:

(i) $4 + (-5)$

Move 5 units to the Left

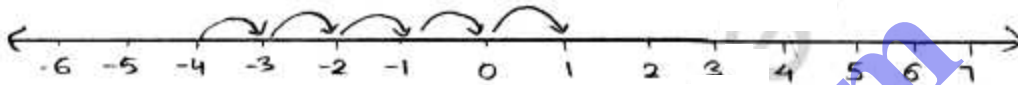


$$4 + (-5) = 4 - 5$$

$$= -1$$

(ii) $(-4) + (5)$

Move 5 units to the Right



$$(-4) + (5) = -4 + 5$$

$$= 5 - 4$$

$$= 1$$

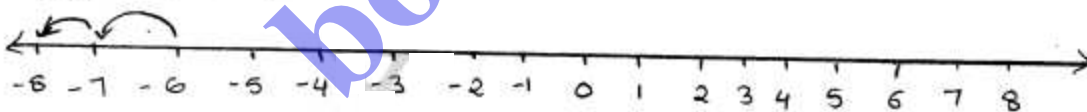
(iii) $7 + (-3)$



Move 3 units to the Left

$$7 + (-3) = 7 - 3 = 4$$

(iv) $-6 + (-2)$



Move 2 units to the Left

$$-6 + (-2) = -6 - 2$$

$$= -8$$

Solution-02:-

(i) $(-8) + (-14)$

As both integers are negative, so add their absolute values and give the negative sign to the

Sum obtained.

$$\text{Now } (-8) + (-14)$$

$$|-8| = 8 \text{ and } |-14| = 14.$$

Adding their absolute values, we get $8+14 = 22$.

$$\therefore (-8) + (-14) = -22.$$

In practice, we write the solution as under:

$$\begin{aligned} (-8) + (-14) &= -(8+14) \\ &= -22. \end{aligned}$$

$$(ii) -35 + (-47).$$

As both integers are negative, so add their absolute values and give the negative sign to the sum obtained

$$\text{Now } -35 = |-35| = 35$$

$$-47 = |-47| = 47.$$

Adding their absolute values, we get $35+47 = 82$.

$$(-35) + (-47) = -82.$$

In practice, we write the solution as under

$$\begin{aligned} (-35) + (-47) &= -(35+47) \\ &= -82. \end{aligned}$$

$$(iii) 91 + (-48)$$

As two integers have different signs, so subtract the smaller absolute value from the larger absolute value and give the sign of the integers, which has larger absolute value.

Here $| -48 | = 48$ and $| 91 | = 91$.

Subtract 48 from 91.

As the sign of the integer with larger absolute value is positive, so put positive sign before the result.

$$\therefore 91 + (-48) = +(91 - 48) \\ = 43.$$

In practice, we write the solution as under:

$$91 + (-48) = 91 - 48 = 43.$$

(iv) $(-203) + 501$.

Here, $| -203 | = 203$ and $| 501 | = 501$

Subtract 203 from 501.

As the sign of the integer with larger absolute value is positive, so put positive sign before the result.

$$(-203) + 501 = +(501 - 203) = 298.$$

In practice, we write the solution as under:

$$(-203) + 501 = 501 - 203 = +298 = 298.$$

(v) $(-36) + 29$.

Here, $| -36 | = 36$ and $| 29 | = 29$.

Subtract 29 from 36.

As the sign of integer with larger absolute value is positive sign before the result negative.

$$(-36) + 29 = -36 + 29$$

$$= -7.$$

In practice, we write the solution as under:

$$-36 + 29 = -36 + 29$$

$$= -7.$$

Solution 02 (vi):

Here, $|-131| = 131$ and $|97| = 97$.

Subtract 131 from 97

As the sign of integer with larger absolute value is negative, so put negative sign before the result.

$$\therefore (-131) + 97 = -(131 - 97) = -34.$$

In practice, we write the solution as under:

$$(-131) + 97 = -(131 - 97) = -34.$$

Solution-03:

$$(-8) + (-14).$$

Add 8 to 14 and put negative sign before the result.

$$\therefore (-8) + (-14) = -(8 + 14) = -22.$$

$$(ii) -1083 + (-3974)$$

Subtract Add 1083 to 3974 and put negative sign before the result

$$-1083 + (-3974) = -(1083 + 3974)$$

$$= -5057.$$

(ii) $706 + (-394)$

Subtract 394 from ~~706~~ and put positive sign before the result

$$706 + (-394) = 706 - 394 = 312.$$

(iii) $1309 + (-2811)$.

Subtract 2811 from 1309 and put negative sign before the result.

$$1309 + (-2811) = 1309 - 2811$$

$$= -1502$$

Solution - 04:-

(i) $-(-5) = +5$.

(ii) $-(-30) = +30$

(iii) $-[-(539)] = -0 + 539$.

Solution - 05:-

(i) -9 $[-(-a) A.I]$

(ii) 11 $[-(-a) (A.I)]$

(iii) 237 $[-(-a) A.I]$

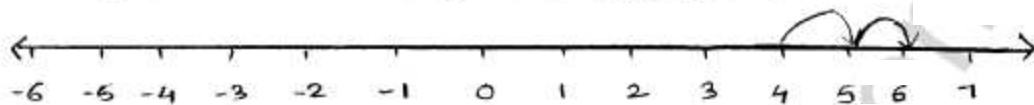
(iv) -561 $[-(-a) A.I]$

Exercise - 3.3

Solution-01:-

(i) $4 - (-2)$.

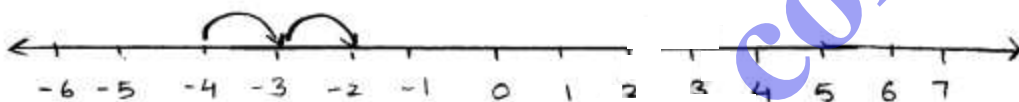
Start from 4 on the number line



Move 2 units to the right, we reach at 6.

$$\therefore 4 - (-2) = 4 + 2 = 6.$$

(ii) $-4 - (-2)$

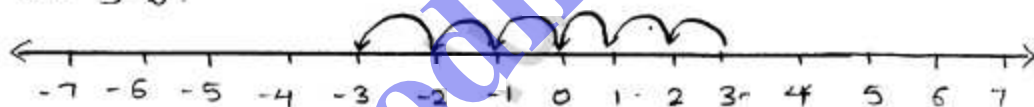


Start from -4 on the number line

Move 2 units to the right, we reach at -2

$$-4 - (-2) = -4 + 2 = -2$$

(iii) $3 - 6$.

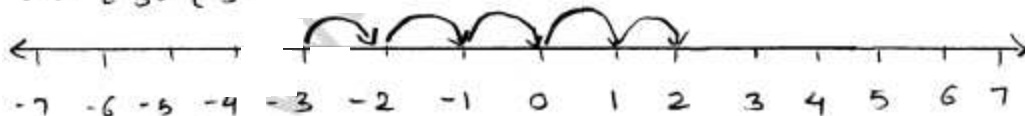


Start from 3 on the number line

Move 6 numbers units to the Left, we reach at -3.

$$3 - 6 = -3.$$

(iv) $(-3) - (-5)$



Start from -3 on the number line

Move 5 units to the Right, we reach at 2

$$-3 - (-5) = -3 + 5 = 5 - 3 = 2.$$

Solution - 02.

(i) - 6 from 9

$$9 - (-6) = 9 + 6 = 15.$$

(ii) 6 from -9.

$$-9 - 6 = -(9 + 6)$$

$$= -15.$$

(iii) -6 from -9

$$-9 - (-6) = -9 + 6$$

$$= -(9 - 6)$$

$$= -3.$$

(iv) -725 from -63

$$-63 - (-725) = -63 + 725$$

$$= -(63 - 725)$$

$$= -(-662)$$

$$= 662.$$

(v) -376 from 10

$$10 - (-376) = 10 + 376$$

$$= 10 + 376$$

$$= 386$$

(vi) 92 from -620

$$-620 - 92 = -(620 + 92)$$

$$= -712.$$

Solution-03

$$(i) -237 - (+1884)$$

$$= -237 - 1884 \\ = -2121$$

$$(ii) -346 - (-1275) = -346 + 1275$$

$$= 1275 - 346$$

$$= 929$$

$$(iii) -190 - (-3512) = -190 + 3512$$

$$= 3512 - 190$$

$$= 3322$$

$$(iv) -2718 - (+6827) = -2718 - 6827$$

$$= -9545$$

Solution-04:

Other integer = Sum of terms - the given number

$$= 17 - (-35)$$

$$= 52$$

Solution-05:-

Other integer = Sum of terms - the given number

$$= -9 - (-23)$$

$$= -9 + 23$$

$$= 23 - 9$$

$$= 14$$

Other number = 14

Solution-06:

$$\text{predecessor of } 0 = 0 - 1 = -1$$

Solution-07:

(i) -31.

$$\text{Successor of } -31 = -31 + 1 = -30$$

$$\text{predecessor of } -31 = -31 - 1 = -32$$

(ii) -735

$$\text{Successor of } -735 = -735 + 1 = -734$$

$$\text{predecessor of } -735 = -735 - 1 = -736$$

(iii) -240.

$$\text{Successor of } -240 = -240 + 1 = -239$$

$$\text{predecessor of } -240 = -240 - 1 = -241$$

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Exercise- 3.4.

Solution-01

$$\begin{aligned} \text{(i)} \quad 6-9+4 &= (6-9)+4 \\ &= (-3)+4 \\ &= 4-3 \\ &= 1 \end{aligned}$$

$$\begin{aligned} \text{(ii)} \quad -5-(-3)+2 &= -5-(-3)+2 \\ &= -5+3+2 \\ &= -5+5 \\ &= 0. \end{aligned}$$

$$\begin{aligned} \text{(iii)} \quad 7+(-5)+(-6) &= 7-5-6 \\ &= 2-6 \\ &= -4. \end{aligned}$$

$$\begin{aligned} \text{(iv)} \quad 6-3-(-5) &= 6-3+5 \\ &= 3+5 \\ &= 8. \end{aligned}$$

Solution-02

$$\begin{aligned} \text{(i)} \quad -77+(-84)+318 &= -77-84+318 \\ &= -161+318 \\ &= 157 \end{aligned}$$

$$\begin{aligned} \text{(ii)} \quad 54+(-218)-(-76) &= 54-218+76 \\ &= 54+76-218 \\ &= -88. \end{aligned}$$

$$\text{ciii)} -121 - (-78) + (-193) + 576$$

$$\begin{aligned} -121 + 78 - 193 + 576 &= -121 - 193 + 78 + 576 \\ &= -314 + 654 \\ &= 340 \end{aligned}$$

$$\text{(iv)} -65 + (-76) - (-28) + 32 = -65 - 76 + 28 + 32$$

$$\begin{aligned} &= -65 - 76 + 60 \\ &= -65 - 16 \\ &= -81 \end{aligned}$$

Solution -03:

$$\text{(i)} 8 - 6 + (-2) - (-3) + 1 = 8 + (-2) - (-3) + 1$$

$$= 8 - 2 + 3 + 1$$

$$= 0 + 4$$

$$= 4$$

$$\text{(ii)} 31 + (-23) - 35 + 18 - 4 - (-3)$$

$$31 - 23 - 35 + 18 - 4 + 3 = 8 - 35 + 14 + 3$$

$$= 8 - 35 + 17$$

$$= 8 - 18$$

$$= -10$$

Solution -04:

Rashmi balance on Monday = ₹ 4370

Rashmi balance in account on Tuesday = ₹ 4370 - 2875 = ₹ 1495

Rashmi balance after deposit on next day

$$= ₹ 1495 + ₹ 1550 = ₹ 3,045$$