

Class- 6 Maths Solution

(By:prashant kumar)

6.Integers

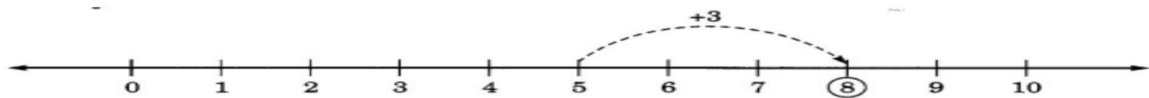
Ex-6.2

Q1.Using the number line write the integer which is:

- (a) 3 more than 5
- (b) 5 more than -5
- (c) 6 less than 2

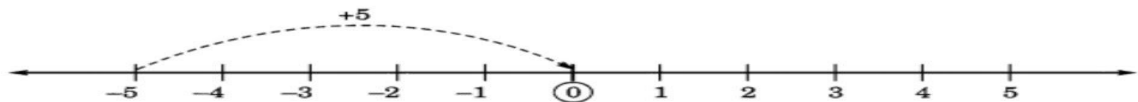
Solution:

(a) 3 more than 5



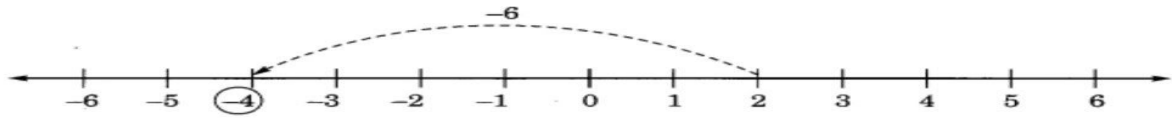
Moving right 3 steps from 5, we reach at 8. Hence, 3 more than 5 = 8.

(b) 5 more than -5



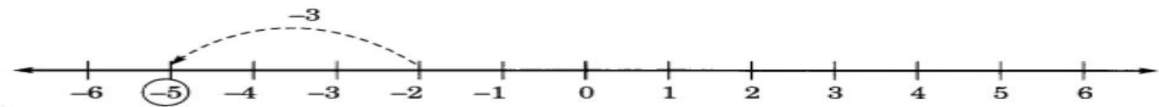
Moving right 5 steps from -5 we reach at 0. Hence, 5 more than -5 = 0

(c) 6 less than 2



Moving left 6 steps from 2, we reach at -4. Hence, 6 less than 2 = -4

(d) 3 less than -2



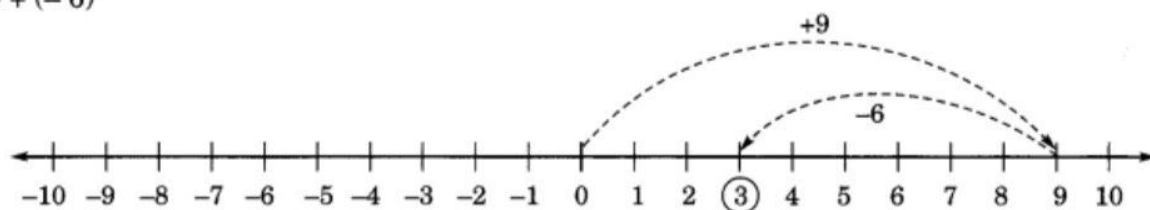
Moving left 3 steps from -2, we reach at -5.

Q2. Use number line and add the following integers:

- (a) $9 + (-6)$
- (b) $5 + (-11)$
- (c) $(-1) + (-7)$
- (d) $(-5) + 10$
- (e) $(-1) + (-2) + (-3)$

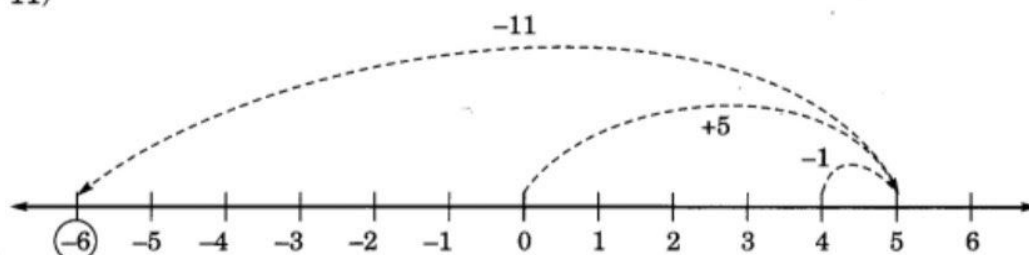
Solution:

(a) $9 + (-6)$



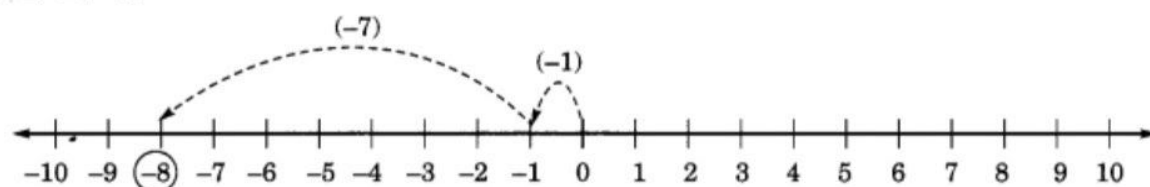
Hence, $9 + (-6) = 3$.

(b) $5 + (-11)$



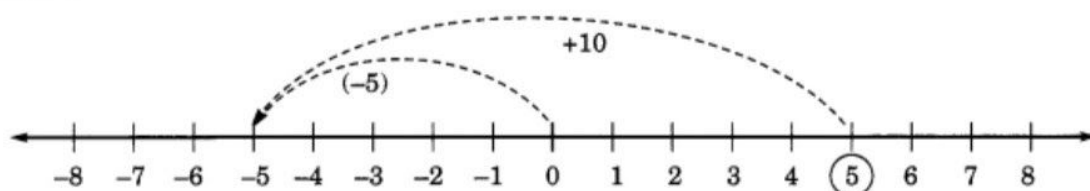
Hence, $5 + (-11) = -6$.

(c) $(-1) + (-7)$



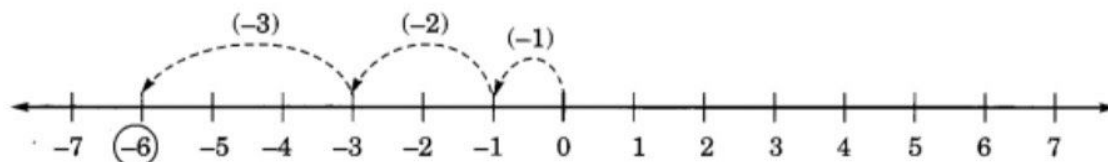
Hence, $(-1) + (-7) = (-8)$.

(d) $(-5) + 10$



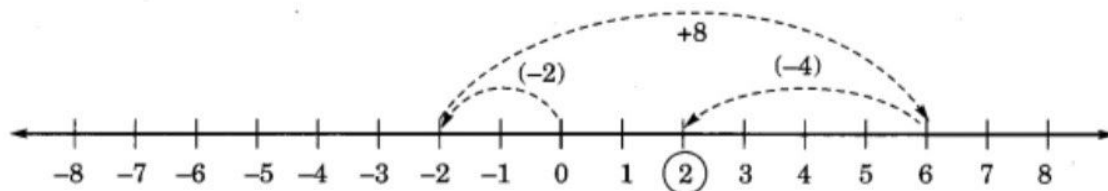
Hence, $(-5) + 10 = 5$.

(e) $(-1) + (-2) + (-3)$



Hence, $(-1) + (-2) + (-3) = (-6)$.

(f) $(-2) + 8 + (-4)$



Hence, $(-2) + 8 + (-4) = 2$.

Q3.Add without using number line:

(a) $11 + (-7)$

(b) $(-13) + (+18)$

(c) $(-10) + (+19)$

(d) $(-250) + (+150)$

(e) $(-380) + (-270)$

(f) $(-217) + (-100)$.

Solution:

(a) $11 + (-7) = 4 + (+7) + (-7)$

[$\because (+7) + (-7) = 0$]

$= 4 + 0 = 4$

Hence, $11 + (-7) = 4$.

(b) $(-13) + (+18) = (-13) + (+13) + (+5)$

[$\because (-13) + (+13) = 0$]

$= 0 + (+5) = 5$

Hence, $(-13) + (+18) = 5$.

(c) $(-10) + (+19) = (-10) + (+10) + (+9)$

[$\because (-10) + (+10) = 0$] $= 0 + (+9) = 9$

Hence, $(-10) + (+19) = 9$.

(d) $(-250) + (+150) = (-100) + (-150) + (+150)$

$= (-100) + 0 = -100$ [$\because (-150) + (+150) = 0$]

Hence, $(-250) + (+150) = -100$.

(e) $(-380) + (-270) = -[380 + 270] = (-650)$

Hence, $(-380) + (-270) = (-650)$.

(f) $(-217) + (-100) = -[217 + 100] = -317$

Q4.Find the sum of:

(a) 137 and -354

(b) -52 and 52 .

(d) -312, 39 and 192

(d) -50, -200 and 300

Solution:

(a) 137 and -354

$(137) + (-354) = (137) + (-137) + (-217)$ [$\because (137) + (-137) = 0$]

$= 0 + (-217) = (-217)$

(b) -52 and 52

$(-52) + (+52) = 0$ [$\because (-a) + (+a) = 0$]

(c) -312, 39 and 192

$$\begin{aligned} & (-312) + (+39) + (+192) \\ &= (-231) + (-81) + (+39) + (+192) \\ &= (-231) + (-81) + (+231) \\ &= (-231) + (+231) + (-81) \\ & [\because (-a) + (a) = 0] \\ &= 0 + (-81) = -81 \end{aligned}$$

(d) -50, -200 and 300

$$\begin{aligned} & (-50) + (-200) + (+300) \\ &= (-50) + (-200) + (+200) + (+100) \\ &= (-50) + 0 + (+100) [\because (-a) + (+a) = 0] \\ &= (-50) + (+100) \\ &= (-50) + (+50) + (+50) \\ &= 0 + (+50) = 50 [\because (-a) + (+a) = 0] \end{aligned}$$

Q5. Find the sum of:

(a) $(-7) + (-9) + 4 + 16$

(b) $(37) + (-2) + (-65) + (-18)$

Solution:

$$\begin{aligned} & (a) (-7) + (-9) + 4 + 16 \\ &= (-7) + (-9) + 4 + (+7) + (+9) \\ &= (-7) + (+7) + (-9) + (+9) + 4 \\ &= 0 + 0 + 4 = 4 [\because (-a) + (a) = 0] \end{aligned}$$

$$\begin{aligned} & (b) (37) + (-2) + (-65) + (-8) \\ &= (+37) + (-75) \\ &= (+37) + (-37) + (-38) \\ &= 0 + (-38) = (-38) [\because (-a) + (+a) = 0] \end{aligned}$$

Ex 6.3

Q1. Find:

(a) $35 - (20)$

(b) $72 - (90)$

(c) $(-15) - (-18)$

(d) $(-20) - (13)$

(e) $23 - (-12)$

(f) $(-32) - (-40)$

Solution:

$$\begin{aligned} & (a) 35 - (20) = 15 + (20) - (20) \\ &= 15 + 0 = 15 [(+a) + (-a) = 0] \end{aligned}$$

(b) $72 - 90$

$$72 - (72 + 18) = 72 - 72 - 18$$

$$= 0 - 18 = -18 \text{ [} a + (-a) = 0 \text{]}$$

$$\begin{aligned} \text{(c) } & (-15) - (-18) \\ &= (-15) + (\text{additive inverse of } -18) \\ &= (-15) + (18) = 3 \end{aligned}$$

$$\begin{aligned} \text{(d) } & (-20) - (13) \\ &= (-20) - (13) = -[20 + 13] = -33 \end{aligned}$$

$$\begin{aligned} \text{(e) } & 23 - (-12) \\ &= 23 - (-12) = 23 + (\text{additive inverse of } -12) \\ &= 23 + 12 = 35 \end{aligned}$$

$$\begin{aligned} \text{(f) } & (-32) - (-40) \\ &= (-32) + (\text{additive inverse of } -40) \\ &= (-32) + 40 = 8 \end{aligned}$$

Q2. Fill in the blanks with >, < or = sign.

$$\text{(a) } (-3) + (-6) \quad (-3) - (-6)$$

$$\text{(b) } (-21) - (-10) \quad (-31) + (-11)$$

$$\text{(c) } 45 - (-11) \quad 57 + (-4)$$

$$\text{(d) } (-25) - (-42) \quad (-42) - (-25)$$

Solution:

$$\text{(a) } (-3) + (-6) = -[3 + 6] = -9 \text{ and } (-3) - (-6) = (-3) + 6 = 3$$

Here, $-9 < 3$

$$\therefore (-3) + (-6) < (-3) - (-6)$$

$$\text{(b) } (-21) - (-10) = (-21) + 10 = -11 \text{ and } (-31) + (-11) = -(31 + 11) = -42$$

Here, $-42 < -11$ or $-11 > -42$ $\therefore (-21), -(-10) > (-31) + (-11)$

$$\text{(c) } 45 - (-11) = 45 + 11 = 56 \text{ and } 57 + (-4) = 57 - 4 = 53$$

Here, $56 > 53$

$$\therefore 45 - (-11) > 57 + (-4)$$

$$\text{(d) } (-25) - (-42) = -25 + 42 = 17$$

$$\text{and } (-42) - (-25) = -42 + 25 = -17$$

Here, $17 > -17$

$$\therefore (-25) - (-42) > (-42) - (-25).$$

Q3. Fill in the blanks.

$$\text{(a) } (-8) + \dots = 0$$

$$\text{(b) } 13 + \dots = 0$$

$$\text{(c) } 12 + (-12) = \dots$$

$$\text{(d) } (-4) + \dots = -12$$

$$(e) \dots -15 = -10.$$

Solution:

$$(a) (-8) + (\text{additive inverse of } -8) = 0$$

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

\therefore Value of blank is 8

$$(b) 13 + (\text{additive inverse of } 13) = 0$$

$$= 13 + (-13) = 0$$

\therefore Value of blank is -13

$$(c) 12 + (-12) = 0 \text{ [}\therefore \text{ } -12 \text{ is additive inverse of } 12\text{]}$$

\therefore The Value of blank is 0

$$(d) (-4) + (-8) = -[4 + 8] = -12$$

\therefore Value of blank is -8 .

$$(e) (+5) - 15 = -10$$

\therefore Value of blank is $+5$.

Q4.Find :

$$(a) (-7) - 8 - (-25)$$

$$(b) (-13) + 32 - 8 - 1$$

$$(c) (-7) + (-8) + (-90)$$

$$(d) 50 - (-40) - (-2)$$

Solution:

$$(a) (-7) - 8 - (-25)$$

$$= (-7) - 8 + 25$$

$$\text{[}\therefore \text{ Additive inverse of } -25 \text{ is } 25\text{]}$$

$$= -7 + 17 = -7 + 7 + 10$$

$$\text{[}\therefore \text{ } (-a) + (+a) = 0\text{]}$$

$$= 0 + 10 = 10.$$

$$(b) (-13) + 32 - 8 - 1$$

$$= (-13) + (13) + 19 - (8 + 1)$$

$$= 0 + 19 - 9$$

$$= 19 - 9 \text{ [}\therefore \text{ } (-13) + (13) = 0\text{]}$$

$$= 10 + 9 - 9 = 10 + 0 = 10.$$

$$\text{[}(+9) - (+9) = 0\text{]}$$

$$(c) (-7) + (-8) + (-90) = -(7 + 8) + (-90)$$

$$= -15 + (-90)$$

$$= -(15 + 90)$$

$$= -105.$$

$$\begin{aligned} & \text{(d) } 50 - (-40) - (-2) \\ & = 50 - [-40 - 2] \\ & = 50 - (-42) \\ & = 50 + 42 \\ & = 92. \end{aligned}$$