Integers
Ex.A

Solution 01:

Answer :

(i) 15 + (−8) = 7

(ii) (−16) + 9 = −7

(iii) (−7) + (−23) = −30

(iv) (−32) + 47 = 15

(v) 53 + (−26) = 27

(vi) (−48) + (−36) = −84

Solution 02:

Answer :

(i) 153 + (−302) = −149

(ii) 1005 + (−277) = 728

(iii) (−2035) + 297 = −1738

(iv) (−489) + (−324) = −813

(v) (−1000) + 438 = −562

(vi) (−238) + 500 = 262

Solution 03:

Answer :

(i) Additive inverse of −83 = −(−83) = 83

(ii) Additive inverse of 256 = −(256) = −256

(iii) Additive inverse of 0 = −(0) = 0

(iv) Additive inverse of 2001 = −(−2001) = 2001

Solution 04:

Answer :

(i) −42 − 28 = (−42) + (−28) = −70

(ii) 42 −(−36) = 42 + 36 = 78

(iii) -53 - (-37) = (-53) - (-37) = -16

(iv) -34 - (-66) = -34 + 66 = 32

(v) 0 - 318 = -318

(vi) (-240) - (-153) = -87

(vii) 0 - (-64) = 0 + 64 = 64

(viii) 144 - (-56) = 144 + 56 = 200

Solution 05:

Answer :

Sum of −1032 and 878 = −1032 + 878
= -154

Subtracting the sum from −34, we get
−34 − (−154)
= (−34)+ 154
= 120

Solution 06:

Answer :

First, we will calculate the sum of 38 and −87.
38 + (−87) = −49

Now, subtracting −134 from the sum, we get:
−49 − (−134)
=(−49) + 134
= 85

Solution 07:

Answer :

(i) −41 (∵ Associative property)

(ii) −83 (∵ Associative property)

(iii) 53 (∵ Commutative property)

(iv) −76 (∵ Commutative property)

(v) 0 (∵ Additive identity)

(vi) 83 (∵ Additive inverse)

(vii) (−60) − (−59) = −1

(viii) (−40) − (−31) = −9

Solution 08:

Answer :

{−13 − (−27)} + {−25 − (−40)}
= {−13 + 27} + {−25 + 40}
=14 + 15
= 29

Solution 09:

Answer :

$36 - (-64) = 36 + 64 = 100$

Now, $(-64) - 36 = (-64) + (-36) = -100$

Here, $100 \neq -100$

Thus, they are not equal.

Solution 10:

Answer :

$(a + b) + c = (-8 + (-7)) + 6 = -15 + 6 = -9$

$a + (b + c) = -8 + (-7 + 6) = -8 + (-1) = -9$

Hence, $(a + b) + c = a + (b + c)$ [i.e., Property of Associativity]

Solution 11:

Answer :

Here, $(a - b) = -9 - (-6) = -3$

Similarly, $(b - a) = -6 - (-9) = 3$

$\therefore (a-b) \neq (b-a)$

Solution 12:

Answer :

Let the other integer be a. Then, we have:

$53 + a = -16$
$\Rightarrow a = -16 - 53 = -69$

$\therefore$ The other integer is -69.

Solution 13:

Answer :

Let the other integer be a.
Then, $-31 + a = 65$
$\Rightarrow a = 65 - (-31) = 96$

$\therefore$ The other integer is 96.

Solution 14:

Answer :

We have:

$a - (-6) = 4$
$\Rightarrow a = 4 + (-6) = -2$

$\therefore a = -2$

Solution 15:

Answer :

(i) Consider the integers 8 and −8. Then, we have:
8 + (−8) = 0

(ii) Consider the integers 2 and (−9). Then, we have:
2 + (−9)= −7, which is a negative integer.

(iii) Consider the integers −4 and −5. Then, we have:
(−4) + (−5) = −9, which is smaller than −4 and −5.

(iv) Consider the integers 2 and 6. Then, we have:
2 + 6 = 8, which is greater than both 2 and 6.

(v) Consider the integers 7 and −4. Then, we have:
7 + (−4) = 3, which is smaller than 7 only.

Solution 16:

Answer :

(i) F (false). −3, −90 and −100 are also integers. We cannot determine the smallest integer, since they are infinite.

(ii) F (false). −10 is less than −7.

(iii) T (true). All negative integers are less than zero.

(iv) T (true).

(v) F (false). Example: −9 + 2 = −7