

## EXERCISE 1D

**The sum of two integers is – 15. If one of them is 9, find the other. Solution:**

It is given that

Sum of two integers = - 15

One integer = 9

Other integer = - 15 - 9

Taking negative sign as common

= - (15 + 9)

= - 24

**1. The difference between integers x and – 6 is – 5. Find the values of x.**

$x - (-6) = - 5$  or  $- 6 - x = - 5$

**Solution:**

It is given that

The difference between integers

$x - (-6) = - 5$  or  $- 6 - x = - 5$

So the value of x is

$x + 6 = - 5$  or  $- x = - 5 + 6$

By further calculation

$x = - 5 - 6$  or  $- x = 1$

$x = - 11$  or  $x = - 1$

**2. The sum of two integers is 28. If one integer is – 45, find the other.**

**Solution:**

It is given that

Sum of two integers = 28

One integer = - 45

Other integer =  $28 - (-45)$

By further calculation

=  $28 + 45$

= 73

**3. The sum of two integers is – 56. If one integer is – 42, find the other.**

**Solution:**

It is given that

Sum of two integers = - 56

One integer = - 42

Other integer =  $- 56 - (- 42)$

By further calculation

=  $- 56 + 42$

= - 14

**4. The difference between an integer x and (-9) is 6. Find all possible values of x.**

**Solution:**

It is given that

The difference between an integer  $x$  and  $(-9)$  is 6

$$x - (-9) = 6 \text{ or } -9 - x = 6$$

So the value of  $x$  is

$$x - (-9) = 6 \text{ or } -9 - x = 6$$

By further calculation

$$x + 9 = 6 \text{ or } -x = 6 + 9$$

So we get

$$x = 6 - 9 \text{ or } -x = 15$$

Here

$$x = -3 \text{ or } x = -15$$

Therefore, possible values of  $x$  are  $-3$  and  $-15$ .

**5. Evaluate:**

(i)  $(-1) \times (-1) \times (-1) \times \dots \dots \dots 60$  times.

(ii)  $(-1) \times (-1) \times (-1) \times (-1) \times \dots \dots \dots 75$  times.

**Solution:**

(i)  $(-1) \times (-1) \times (-1) \times 1$  60 times because 1 is multiplied even times.

(ii)  $(-1) \times (-1) \times (-1) \times (-1) \times (-1)$  75 times because  $(-1)$  is multiplied odd times.

**6. Evaluate:**

(i)  $(-2) \times (-3) \times (-4) \times (-5) \times (-6)$

(ii)  $(-3) \times (-6) \times (-9) \times (-12)$

(iii)  $(-11) \times (-15) \times (-11) \times (-25)$

(iv)  $10 \times (-12) + 5 \times (-12)$

**Solution:**

(i)  $(-2) \times (-3) \times (-4) \times (-5) \times (-6)$

$$= 6 \times 20 \times (-6)$$

By further calculation

$$= 120 \times (-6)$$

$$= -720$$

(ii)  $(-3) \times (-6) \times (-9) \times (-12)$

$$= 18 \times 108$$

By further calculation

$$= 1944$$

(iii)  $(-11) \times (-15) + (-11) \times (-25)$

$$= 165 + 275$$

By further calculation

$$= 440$$

(iv)  $10 \times (-12) + 5 \times (-12)$

$$= -120 - 60$$

By further calculation

$$= -180$$

7. (i) If  $x \times (-1) = -36$ , is  $x$  positive or negative?

(ii) If  $x \times (-1) = 36$ , is  $x$  positive or negative?

**Solution:**

(i)  $x \times (-1) = -36$

So we get

$$-x = -36$$

By further simplification

$$x = 36$$

Hence, it is a positive integer.

(ii)  $x \times (-1) = 36$

So we get

$$-x = 36$$

By further simplification

$$x = -36$$

Hence, it is a negative integer.

8. Write all the integers between  $-15$  and  $15$ , which are divisible by  $2$  and  $3$ .

**Solution:**

Here the integers between  $-15$  and  $15$  are

$-12, -6, 0, 6$  and  $12$  which are divisible by  $2$  and  $3$ .

9. Write all the integers between  $-5$  and  $5$ , which are divisible by  $2$  or  $3$ .

**Solution:**

Here the integers between  $-5$  and  $5$  are

$-4, -3, -2, 0, 2, 3$  and  $4$  which are divisible by  $2$  or  $3$ .

10. Evaluate:

(i)  $(-20) + (-8) \div (-2) \times 3$

(ii)  $(-5) - (-48) \div (-16) + (-2) \times 6$

(iii)  $16 + 8 \div 4 - 2 \times 3$

(iv)  $16 \div 8 \times 4 - 2 \times 3$

(v)  $27 - [5 + \{28 - (29 - 7)\}]$

(vi)  $48 - [18 - \{16 - (5 - 4 + 1)\}]$

(vii)  $-8 - \{-6(9 - 11) + 18 \div -3\}$

(viii)  $(24 \div 12 - 9 - 12) - (3 \times 8 \div 4 + 1)$

**Solution:**

(i)  $(-20) + (-8) \div (-2) \times 3$

It can be written as

$$= -20 + 4 \times 3$$

By further calculation

$$= -20 + 12$$

$$= -8$$

(ii)  $(-5) - (-48) \div (-16) + (-2) \times 6$

It can be written as

$$\begin{aligned} &= (-5) - 3 + (-2) \times 6 \\ &\text{By further calculation} \\ &= -5 - 3 - 12 \\ &\text{So we get} \\ &= -8 - 12 \\ &= -20 \end{aligned}$$

$$\begin{aligned} \text{(iii)} \quad &16 + 8 \div 4 - 2 \times 3 \\ &\text{It can be written as} \\ &= 16 + 2 - 2 \times 3 \\ &\text{By further calculation} \\ &= 16 + 2 - 6 \\ &\text{So we get} \\ &= 18 - 6 \\ &= 12 \end{aligned}$$

$$\begin{aligned} \text{(iv)} \quad &16 \div 8 \times 4 - 2 \times 3 \\ &\text{It can be written as} \\ &= 2 \times 4 - 2 \times 3 \\ &\text{By further calculation} \\ &= 8 - 6 \\ &= 2 \end{aligned}$$

$$\begin{aligned} \text{(v)} \quad &27 - [5 + \{28 - (29 - 7)\}] \\ &\text{It can be written as} \\ &= 27 - [5 + \{28 - 22\}] \\ &\text{By further calculation} \\ &= 27 - [5 + 6] \\ &\text{So we get} \\ &= 27 - 11 \\ &= 16 \end{aligned}$$

$$\begin{aligned} \text{(vi)} \quad &48 - [18 - \{16 - (5 - 4 + 1)\}] \\ &\text{It can be written as} \\ &= 48 - [18 - \{16 - (5 - 5)\}] \\ &\text{By further calculation} \\ &= 48 - [18 - \{16 - 0\}] \\ &\text{So we get} \\ &= 48 - [18 - 16] \\ &= 48 - 2 \\ &= 46 \end{aligned}$$

$$\begin{aligned} \text{(vii)} \quad &-8 - \{-6(9 - 11) + 18 \div -3\} \\ &\text{It can be written as} \\ &= -8 - \{-6(-2) - 6\} \\ &\text{By further calculation} \\ &= -8 - \{12 - 6\} \\ &\text{So we get} \\ &= -8 - 6 \\ &= -14 \end{aligned}$$

$$(viii) (24 \div \overline{12 - 9} - 12) - (3 \times 8 \div 4 + 1)$$

It can be written as

$$= (24 \div 3 - 12) - (3 \times 2 + 1)$$

By further calculation

$$= (8 - 12) - (6 + 1)$$

So we get

$$= -4 - 7$$

$$= -11$$

**11. Find the result of subtracting the sum of all integers between 20 and 30 from the sum of all integers from 20 to 30.**

**Solution:**

Here the required number = sum of all integers between 20 and 30 – integers between 20 and 30

Substituting the values

$$= (20 + 21 + 22 + 23 + 24 + 25 + 26 + 27 + 28 + 29 + 30) - (21 + 22 + 23 + 24 + 25 + 26 + 27 + 28 + 29)$$

On further calculation

$$= 20 + 30 = 50$$

Hence, the required number is 50.

**12. Add the product of (-13) and (-17) to the quotient of (-187) and 11.**

**Solution:**

It is given that

$$(-13) \times (-17) + (-187 \div 11)$$

By further calculation

$$= (-13) \times (-17) + (-17)$$

So we get

$$= 221 - 17$$

$$= 204$$

**13. The product of two integers is – 180. If one of them is 12, find the other.**

**Solution:**

Product of two integers = - 180

One integer = 12

Other integer = - 180/ 12

By division we get

$$= -15$$

**14. (i) A number changes from – 20 to 30. What is the increase or decrease in the number?**

**(ii) A number changes from 40 to – 30. What is the increase or decrease in the number?**

**Solution:**

(i) A number changes from – 20 to 30

It can be written as

$$-20 - 30 = -50$$

Hence, - 50 will be the increase in the number.

(ii) A number changes from 40 to  $-30$

It can be written as

$$40 - (-30) = 40 + 30 = 70$$

Hence, 70 will be the decrease in the number.



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