

EXERCISE 1D

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1. 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

 $= -(15 + 9)$ $= -24$ **2. 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 $x = -1$ **3. 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

 $= 28 + 45$ $= 73$ **4. 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

 $= -56 + 42$ $= -14$ **5. 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 .

6. Evaluate:

(i) $(-1) \times (-1) \times (-1) \times \dots \dots \dots 60 \text{ times.}$

(ii) $(-1) \times (-1) \times (-1) \times (-1) \times \dots \dots \dots 75 \text{ times.}$

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.

7. 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

$$= -180$$

8. (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.

9. 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 .

10. 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 .

11. 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

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

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

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

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

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

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

(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

$$= -4 - 7$$

$$= -11$$

12. 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.

13. 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

$$= 221 - 17$$

$$= 204$$

14. 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

$$= -15$$

15. (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.

