

# Integers

## EXERCISE 1 (A)

### Question 1.

Evaluate:

1.  $427 \times 8 + 2 \times 427$
2.  $394 \times 12 + 394 \times (-2)$
3.  $558 \times 27 + 3 \times 558$

**Solution:**

1.  $427 \times 8 + 2 \times 427 = 427 \times (8 + 2)$  (Distributive property)  
 $= 427 \times 10$   
 $= 4270$
2.  $394 \times 12 + 394 \times (-2) = 394 \times (12 - 2)$  (Distributive property)  
 $= 394 \times 10$   
 $= 3940$
3.  $558 \times 27 + 3 \times 558 = 558 \times (27 + 3)$  (Distributive property)  
 $= 558 \times 30$   
 $= 16740$

### Question 2.

Evaluate:

1.  $673 \times 9 + 673$
2.  $1925 \times 101 - 1925$

**Solution:**

1.  $673 \times 9 + 673 = 673 \times (9 + 1)$  (Distributive property)  $= 673 \times 10 = 6730$
2.  $1925 \times 101 - 1925 = 1925 \times (101 - 1)$  (Distributive property)  $= 1925 \times 100 = 192500$

### Question 3.

Verify:

1.  $37 \times \{8 + (-3)\} = 37 \times 8 + 37 \times - (3)$
2.  $(-82) \times \{(-4) + 19\} = (-82) \times (-4) + (-82) \times 19$
3.  $\{7 - (-7)\} \times 7 = 7 \times 7 - (-7) \times 7$
4.  $\{(-15) - 8\} \times -6 = (-15) \times (-6) - 8 \times (-6)$

### Solution:

1.  $37 \times \{8 + (-3)\} = 37 \times 8 + 37 \times - (3)$

$$\text{L.H.S.} = 37 \times \{8 + (-3)\}$$

$$= 37 \times \{8-3\}$$

$$= 37 \times \{5\}$$

$$= 37 \times 5$$

$$= 185$$

$$\text{R.H.S.} = 37 \times 8 + 37 - 3$$

$$= 37 \times (8 - 3)$$

$$= 37 \times 5$$

$$= 185$$

$$\text{Hence, L.H.S.} = \text{R.H.S.}$$

2.  $(-82) \times \{(-4) + 19\} = (-82) \times (-4) + (-82) \times 19$

$$\text{L.H.S.} = (-82) \times \{(-4) + 19\}$$

$$= (-82) \times \{-4 + 19\}$$

$$= (-82) \times \{15\}$$

$$= -82 \times 15$$

$$= -1230$$

$$\text{R.H.S.} = (-82) \times (-4) + (-82) \times 19$$

$$= -82 \times (-4 + 19)$$

$$= -82 \times 15$$

$$= -1230$$

$$\text{Hence, L.H.S.} = \text{R.H.S.}$$

3.  $\{7 - (-7)\} \times 7 = 7 \times 7 - (-1) \times 7$

$$\text{L.H.S.} = \{7 - (-7)\} \times 7$$

$$= \{7 + 7\} \times 7$$

$$= \{14\} \times 7$$

$$= 14 \times 7$$

$$= 98$$

$$\text{R.H.S.} = 7 \times 7 - (-7) \times 7$$

$$= 7 \times 7 + 7 \times 7 =$$

$$7 \times (7 + 7)$$

$$= 7 \times (14)$$

$$= 98$$

$$\text{Hence, L.H.S.} = \text{R.H.S.}$$

4.  $\{(-15) - 8\} \times -6 = (-15) \times (-6) - 8 \times (-6)$

$$\text{L.H.S.} = \{(-15)-8\} \times -6$$

$$= \{-15-8\} \times -6$$

$$= \{-23\} \times -6$$

$$= -23 \times -6$$

$$= 138$$

$$\text{R.H.S.} = (-15) \times (-6) - 8 \times (-6)$$

$$= -6 \times (-15-8)$$

$$= -6 \times -23$$

$$= 138$$

Hence, L.H.S. = R.H.S.

#### Question 4.

Evaluate:

1.  $15 \times 8$
2.  $15 \times (-8)$
3.  $(-15) \times 8$
4.  $(-15) \times -8$

**Solution:**

1.  $15 \times 8 = 120$
2.  $15 \times (-8) = -120$
3.  $(-15) \times 8 = -120$
4.  $(-15) \times -8 = 120$

(Since the number of negative integers in the product is even)

#### Question 5.

Evaluate:

1.  $4 \times 6 \times 8$
2.  $4 \times 6 \times (-8)$
3.  $4 \times (-6) \times 8$
4.  $(-4) \times 6 \times 8$
5.  $4 \times (-6) \times (-8)$
6.  $(-4) \times (-6) \times 8$
7.  $(-4) \times 6 \times (-8)$
8.  $(-4) \times (-6) \times (-8)$

**Solution:**

1.  $4 \times 6 \times 8 = 192$
2.  $4 \times 6 \times (-8) = -192$   
(It have one negative factor)
3.  $4 \times (-6) \times 8 = -192$   
(It have one negative factor)
4.  $(-4) \times 6 \times 8 = -192$   
(It have one negative factor)
5.  $4 \times (-6) \times (-8) = 192$   
(It have two negative factors)
6.  $(-4) \times (-6) \times 8 = 192$   
(It have two negative factors)

7.  $(-4) \times 6 \times (-8) = 192$   
(It have two negative factors)
8.  $(-4) \times (-6) \times (-8) = -192$   
(It have three negative factors)

### Question 6.

Evaluate:

1.  $2 \times 4 \times 6 \times 8$
2.  $2 \times (-4) \times 6 \times 8$
3.  $(-2) \times 4 \times (-6) \times 8$
4.  $(-2) \times (-4) \times 6 \times (-8)$
5.  $(-2) \times (-4) \times (-6) \times (-8)$

**Solution:**

1.  $2 \times 4 \times 6 \times 8 = 384$
2.  $2 \times (-4) \times 6 \times 8 = -384$   
(Number of negative integer in the product is odd)
3.  $(-2) \times 4 \times (-6) \times 8 = 384$   
(Number of negative integer in the product is even)
4.  $(-2) \times (-4) \times 6 \times (-8) = -384$   
(Number of negative integer in the product is odd)
5.  $(-2) \times (-4) \times (-6) \times (-8) = 384$   
(Number of negative integer in the product is even)

### Question 7.

Determine the integer whose product with '-1' is:

1. **-47**
2. **63**
3. **-1**
4. **0**

**Solution:**

1.  $-1 \times 47 = -47$   
Hence, integer is 47
2.  $-1 \times -63 = 63$   
Hence, integer is -63
3.  $-1 \times 1 = -1$   
Hence, integer is 1
4.  $-1 \times 0 = 0$   
Hence, integer is 0

**Question 8.**

**Eighteen integers are multiplied together. What will be the sign of their product, if:**

1. **15 of them are negative and 3 are positive?**
2. **12 of them are negative and 6 are positive?**
3. **9 of them are positive and the remaining are negative?**
4. **all are negative?**

**Solution:**

1. Since out of eighteen integers, 15 of them are negative, which is odd number. Hence, sign of product will be negative (-).
2. Since out of eighteen integers 12 of them are negative, which is even number. Hence sign of product will be positive (+).
3. Since out of eighteen integers 9 of them are negative, which is odd number. Hence, sign of product will be negative (-).
4. Since all are negative, which is even number. Hence sign of product will be positive (+).

**Question 9.**

**Find which is greater?**

1.  **$(8 + 10) \times 15$  or  $8 + 10 \times 15$**
2.  **$12 \times (6 - 8)$  or  $12 \times 6 - 8$**
3.  **$\{(-3) - 4\} \times (-5)$  or  $(-3) - 4 \times (-5)$**

**Solution:**

1.  $(8 + 10) \times 15$  or  $8 + 10 \times 15$   
 $(8 + 10) \times 15 = 18 \times 15 = 270$   
 $8 + 10 \times 15 = 8 + 150 = 158$   
 $\therefore (8 + 10) \times 15 > 8 + 10 \times 15$
2.  $12 \times (6 - 8)$  or  $12 \times 6 - 8$   
 $12 \times (6 - 8) = 12 \times (-2) = -24$   
 $12 \times 6 - 8 = 72 - 8 = 64$   
 $\therefore 12 \times 6 - 8 > 12 \times (6 - 8)$
3.  $\{(-3) - 4\} \times (-5)$  or  $(-3) - 4 \times (-5)$   
 $\{(-3) - 4\} \times (-5) = \{-3 - 4\} \times (-5) = -7 \times (-5) = 35$   
 $(-3) - 4 \times (-5) = -7 \times (-5) = 35$   
 $\therefore \{(-3) - 4\} \times (-5) = (-3) - 4 \times (-5)$

**Question 10.**

**State, true or false :**

1. product of two integers can be zero.
2. product of 120 negative integers and 121 positive integers is negative.
3.  $a \times (b + c) = a \times b + c$
4.  $(b - c) \times a = b - c \times a$

**Solution:**

1. False.
2. False.  
Correct : Since 120 integers are even numbers, hence product will be positive and for 121 integers are positive in numbers, hence product will be positive.
3. False.  
Correct :  $a \times (b + c) \neq a \times b + c$   
 $ab + ac \neq ab + c$
4. False.  
Correct:  $(b - c) \times a \neq b - c \times a$   
 $ab - ac \neq b - ca$

**EXERCISE 1 (B)**

**Question 1.**

**Divide:**

- (i) 117 by 9
- (ii) (-117) by 9
- (iii) 117 by (-9)
- (iv) (-117) by (-9)
- (v) 225 by (-15)
- (vi) (-552)  $\div$  24
- (vii) (-798) by (-21)
- (viii) (-910)  $\div$  - 26

**Solution :**

$$(i) 117 \text{ by } 9 = \frac{117}{9} = \frac{13 \times 9}{9} = 13$$

$$(ii) (-117) \text{ by } 9 = \frac{-117}{9} = \frac{-13 \times 9}{9} = -13$$

$$(iii) 117 \text{ by } (-9) = \frac{117}{-9} = \frac{13 \times 9}{-9} = -13$$

(iv)  $(-117)$  by  $(-9)$

$$= \frac{-117}{-9} = \frac{117}{9} = \frac{13 \times 9}{9} = 13$$

$$(v) 225 \text{ by } (-15) = -\frac{225}{15} = -\frac{15 \times 15}{15} = -15$$

$$(vi) (-552) \div 24 = -\frac{552}{24} = -\frac{23 \times 24}{24} = -23$$

(vii)  $(-798)$  by  $(-21)$

$$= \frac{-798}{-21} = \frac{798}{21} = \frac{38 \times 21}{21} = 38$$

$$(viii) (-910) \div 26 = -\frac{910}{26} = -\frac{35 \times 26}{26} = -35$$

### **Question 2.**

**Evaluate:**

(i)  $(-234) \div 13$

(ii)  $234 \div (-13)$

(iii)  $(-234) \div (-13)$

(iv)  $374 \div (-17)$

(v)  $(-374) \div 17$

(vi)  $(-374) \div (-17)$

(vii)  $(-728) \div 14$

(viii)  $272 \div (-17)$

**Solution:**

$$(i) (-234) \div 13 = \frac{-234}{13} = \frac{-18 \times 13}{13} = -18$$

$$(ii) 234 \div (-13) = \frac{234}{-13} = \frac{18 \times 13}{-13} = -18$$

$$(iii) (-234) \div (-13) \\ = \frac{-234}{-13} = \frac{234}{13} = \frac{18 \times 13}{13} = 18$$

$$(iv) 374 \div (-17) = \frac{374}{-17} = \frac{22 \times 17}{-17} = -22$$

$$(v) (-374) \div 17 = -\frac{374}{17} = -\frac{22 \times 17}{17} = -22$$

$$(vi) (-374) \div (-17) \\ = \frac{-374}{-17} = \frac{374}{17} = \frac{22 \times 17}{17} = 22$$

$$(vii) (-728) \div 14 = -\frac{728}{14} = -\frac{52 \times 14}{14} = -52$$

$$(viii) 272 \div (-17) = -\frac{16 \times 17}{17} = -16$$

**Question 3.**

Find the quotient in each of the following divisions:

(i)  $299 \div 23$

(ii)  $299 \div (-23)$

(iii)  $(-384) \div 16$

(iv)  $(-572) \div (-22)$

(v)  $408 \div (-17)$

**Solution:**

$$(iv) (-572) \div (-22) = \frac{-572}{-22}$$

$$= \frac{572}{22} = \frac{26 \times 22}{22} = 26$$

$$(v) 408 \div (-17) = -\frac{408}{17} = -\frac{24 \times 17}{17} = -24$$

$$(i) 299 \div 23 = \frac{299}{23} = \frac{23 \times 13}{23} = 13$$

$$(ii) 299 \div (-23) = -\frac{299}{23} = -\frac{23 \times 13}{23} = -13$$

$$(iii) (-384) \div 16 = -\frac{384}{16} = -\frac{24 \times 16}{16} = -24$$

#### Question 4.

Divide:

(i) 204 by 17

(ii) 152 by -19

(iii) 0 by 35

(iv) 0 by (-82)

(v) 5490 by 10

(vi) 762800 by 100

**Solution:**

$$(i) 204 \text{ by } 17 = \frac{204}{17} = \frac{12 \times 17}{17} = 12$$

$$(ii) 152 \text{ by } -19 = -\frac{152}{19} = -\frac{8 \times 19}{19} = -8$$

$$(iii) 0 \text{ by } 35 = \frac{0}{35} = 0$$

$$(iv) 0 \text{ by } (-82) = -\frac{0}{82} = 0$$

$$(v) 5490 \text{ by } 10 = \frac{5490}{10} = \frac{549 \times 10}{10} = 549$$

$$(vi) 762800 \text{ by } 100 = \frac{762800}{100} = 7628$$

### Question 5.

State, true or false :

1.  $0 \div 32 = 0$
2.  $0 \div (-9) = 0$
3.  $(-37) \div 0 = 0$
4.  $0 \div 0 = 0$

### Solution:

1. True.
2. True.
3. False.  
**Correct:** It is not meaningful (defined)
4. False.  
**Correct:** It is not defined.

### Question 6.

Evaluate:

- (i)  $42 \div 7 + 4$
- (ii)  $12 + 18 \div 3$
- (iii)  $19 - 20 \div 4$
- (iv)  $16 - 5 \times 3 + 4$
- (v)  $6 - 8 - (-6) \div 2$
- (vi)  $13 - 12 \div 4 \times 2$
- (vii)  $16 + 8 \div 4 - 2 \times 3$
- (viii)  $16 \div 8 + 4 - 2 \times 3$
- (ix)  $16 - 8 + 4 \div 2 \times 3$
- (x)  $(-4) + (-12) \div (-6)$
- (xi)  $(-18) + 6 \div 3 + 5$
- (xii)  $(-20) \times (-1) + 14 - 7$

**Solution:**

$$(i) 42 \div 7 + 4$$

$$= \frac{42}{7} + 4 = 6 + 4 = 10$$

$$(ii) 12 + 18 \div 3$$

$$= 12 + \frac{18}{3} = 12 + 6 = 18$$

$$(iii) 19 - 20 \div 4$$

$$= 19 - \frac{20}{4} = 19 - 5 = 14$$

$$(iv) 16 - 5 \times 3 + 4$$

$$= 16 - 15 + 4 = 16 - 19 = -3$$

$$(v) 6 - 8 - (-6) \div 2$$

$$= 6 - 8 - \left(\frac{-6}{2}\right) = 6 - 8 - (-3)$$

$$= 6 - 8 + 3 = 9 - 8 = 1$$

$$(vi) 13 - 12 \div 4 \times 2$$

$$= 13 - \frac{12}{4} \times 2 = 13 - 3 \times 2$$

$$= 13 - 6 = 7$$

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

$$= 16 + \frac{8}{4} - 2 \times 3 = 16 + 2 - 2 \times 3$$

$$= 16 + 2 - 6 = 18 - 6 = 12$$

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

$$= \frac{16}{8} + 4 - 2 \times 3 = 2 + 4 - 6$$

$$= 6 - 6 = 0$$

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

$$= 16 - 8 + \frac{4}{2} \times 3 = 16 - 8 + 2 \times 3$$

$$= 16 - 8 + 6$$

$$= 16 + 6 - 8 = 22 - 8 = 14$$

$$(x) (-4) + (-12) \div (-6)$$

$$= (-4) + \left( \frac{-12}{-6} \right) = (-4) + 2$$

$$= -4 + 2 = -2$$

$$(xi) (-18) + 6 \div 3 + 5$$

$$= (-18) + \frac{6}{3} + 5 = (-18) + 2 + 5$$

$$= -18 + 7 = -11$$

$$(xii) (-20) \times (-1) + 14 \div 7$$

$$= (-20) \times (-1) + \frac{14}{7} = (-20) \times (-1) + 2$$

$$= 20 + 2 = 22$$

## EXERCISE 1 (C)

### Question 1.

Evaluate:

$$18 - (20 - 15 \div 3)$$

**Solution:**

$$18 - (20 - 15 \div 3)$$

$$= 18 - \left( 20 - \frac{15}{3} \right)$$

$$= 18 - (20 - 5)$$

$$= 18 - 20 + 5$$

$$= 18 + 5 - 20$$

$$= 23 - 20$$

$$= 3$$

**Question 2.**

$$-15 + 24 \div (15 - 13)$$

**Solution:**

$$-15 + 24 \div (15 - 13)$$

$$= -15 + 24 \div 2$$

$$= -15 + 12$$

$$= -3$$

**Question 3.**

$$35 - [15 + \{14 - (13 + \overline{2 - 1 + 3})\}]$$

**Solution:**

$$35 - [15 + \{14 - (13 + \overline{2 - 1 + 3})\}]$$

$$= 35 - [15 + 14 - (13 + 4)]$$

$$= 35 - [15 + 14 - (13 + 4)]$$

$$= 35 - \{15 + 14 - 17\}$$

$$= 35 - 15 - 14 + 17$$

$$= 35 + 17 - 15 - 14$$

$$= 52 - 29$$

$$= 23$$

**Question 4.**

$$27 - [13 + \{4 - (8 + 4 - \overline{1 + 3})\}]$$

**Solution:**

$$27 - [13 + \{4 - (8 + 4 - \overline{1 + 3})\}]$$

$$= 27 - [13 + \{4 - (8 + 4 - 4)\}]$$

$$= 27 - [13 + \{4 - 8\}]$$

$$= 27 - [13 + (-4)]$$

$$= 21 - [9]$$

$$= 27 - 9$$

$$= 18$$

**Question 5.**

$$32 - [43 - \{51 - (20 - \overline{18 - 7})\}]$$

**Solution:**

$$32 - [43 - \{51 - (20 - \overline{18 - 7})\}]$$

$$= 32 - [43 - \{51 - (20 - 11)\}]$$

$$= 32 - [43 - \{51 - 9\}]$$

$$= 32 - [43 - 42]$$

$$= 32 - 1$$

$$= 31$$

**Question 6.**

$$46 - [26 - \{14 - (15 - 4 \div 2 \times 2)\}]$$

**Solution:**

$$46 - [26 - \{14 - (15 - 4 \div 2 \times 2)\}]$$

$$\begin{aligned}
&= 46 - [26 - \{14 - (15 - 2 \times 2)\}] \\
&= 46 - [26 - \{14 - (15 - 4)\}] \\
&= 46 - [26 - \{14 - 11\}] \\
&= 46 - [26 - 3] \\
&= 46 - 23 \\
&= 23
\end{aligned}$$

**Question 7.**

$$45 - [38 - \{60 \div 3 - (6 - 9 \div 3) \div 3\}]$$

**Solution:**

$$\begin{aligned}
&45 - [38 - \{60 \div 3 - (6 - 9 \div 3) \div 3\}] \\
&= 45 - [38 - \{60 \div 3 - (6 - 3) \div 3\}] \\
&= 45 - [38 - \{20 - 3 \div 3\}] \\
&= 45 - [38 - \{20 - 1\}] \\
&= 45 - [38 - 19] \\
&= 45 - 19 \\
&= 26
\end{aligned}$$

**Question 8.**

$$17 - [17 - \{17 - (17 - \overline{17 - 17})\}]$$

**Solution:**

$$\begin{aligned}
&17 - [17 - \{17 - (17 - \overline{17 - 17})\}] \\
&= 17 - [17 - \{17 - (17 - 0)\}] \\
&= 17 - [17 - \{17 - 17\}] \\
&= 17 - [17 - 0] \\
&= 17 - 17 \\
&= 0
\end{aligned}$$

**Question 9.**

$$2550 - [510 - \{270 - (90 - \overline{80 + 7})\}]$$

**Solution:**

$$\begin{aligned}
&2550 - [510 - \{270 - (90 - \overline{80 + 7})\}] \\
&= 2550 - [510 - \{270 - (90 - 87)\}] \\
&= 2550 - [510 - \{270 - 3\}] \\
&= 2550 - [510 - 267] \\
&= 2550 - 243 \\
&= 2307
\end{aligned}$$

**Question 10.**

$$30 + \{[-2 \times (25 - \overline{13 - 3})]\}$$

**Solution:**

$$\begin{aligned}
&30 + \{[-2 \times (25 - \overline{13 - 3})]\} \\
&= 30 + \{[-2 \times (25 - 10)]\} \\
&= 30 + \{[-2 \times 15]\} \\
&= 30 + [-30]
\end{aligned}$$

$$= 30 - 30$$

$$= 0$$

**Question 11.**

$$88 - \{5 - (-48) + (-16)\}$$

**Solution:**

$$88 - \{5 - (-48) + (-16)\}$$

$$= 88 - \left\{ 5 - \frac{(-48)}{-16} \right\}$$

$$= 88 - \{5 - 3\}$$

$$= 88 - 2$$

$$= 86$$

**Question 12.**

$$9 \times (8 - \overline{3 + 2}) - 2(2 + \overline{3 + 3})$$

**Solution:**

$$9 \times (8 - \overline{3 + 2}) - 2(2 + \overline{3 + 3})$$

$$= 9 \times (8 - 5) - 2(2 + 6)$$

$$= 9 \times 3 - 2 \times 8$$

$$= 27 - 16$$

$$= 11$$

**Question 13.**

$$2 - [3 - \{6 - (5 - \overline{4 - 3})\}]$$

**Solution:**

$$2 - [3 - \{6 - (5 - \overline{4 - 3})\}]$$

$$\Rightarrow 2 - [3 - \{6 - (5 - 1)\}]$$

$$\Rightarrow 2 - [3 - \{6 - 4\}]$$

$$\Rightarrow 2 - (3 - 2)$$

$$\Rightarrow 2 - 1 = 1$$

## EXERCISE 1 (D)

**Question 1.**

The sum of two integers is -15. If one of them is 9, find the other.

**Solution:**

Sum of two integers = -15  
 One integer = 9  
 $\therefore$  Second integer =  $-15 - 9$   
 $= -(15 + 9)$   
 $= -24$

**Question 2.**

The difference between an integer and -6 is -5. Find the values of x.

**Solution:**

The difference between an integer

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

∴ Value of

$$\Rightarrow x - (-6) = -5$$

$$\Rightarrow x + 6 = -5$$

$$x = -5 - 6$$

$$x = -11$$

**Question 3.**

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

**Solution:**

Sum of two integers = 28

One integer = -45

$$\therefore \text{Second integer} = 28 - (-45)$$

$$= 28 + 45$$

$$= 73$$

**Question 4.**

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

**Solution:**

Sum of two integers = -56

One integer = -42

$$\therefore \text{Second integer} = -56 - (-42)$$

$$= -56 + 42$$

$$= -14$$

**Question 5.**

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

**Solution:**

The difference between an integer  $x - (-9) = 6$  or  $-9 - x = 6$

∴ Value of  $x$

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

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

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

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

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

**Question 6.**

Evaluate:

1.  $(-1) \times (-1) \times (-1) \times \dots 60 \text{ times.}$
2.  $(-1) \times (-1) \times (-1) \times (-1) \times \dots 75 \text{ times.}$

**Solution:**

- 1 (because (-1) is multiplied even times.)
- 1 (because (-1) is multiplied odd times.)

**Question 7.**

**Evaluate:**

1.  $(-2) \times (-3) \times (-4) \times (-5) \times (-6)$
2.  $(-3) \times (-6) \times (-9) \times (-12)$
3.  $(-11) \times (-15) + (-11) \times (-25)$
4.  $10 \times (-12) + 5 \times (-12)$

**Solution:**

1.  $(-2) \times (-3) \times (-4) \times (-5) \times (-6)$   
 $\Rightarrow 6 \times 20 \times (-6) = 120 \times (-6)$   
 $= -720$
2.  $(-3) \times (-6) \times (-9) \times (-12)$   
 $\Rightarrow 18 \times 108$   
 $= 1944$
3.  $(-11) \times (-15) + (-11) \times (-25)$   
 $\Rightarrow 165 + 275$   
 $= 440$
4.  $10 \times (-12) + 5 \times (-12)$   
 $\Rightarrow -120 - 60$   
 $= -180$

**Question 8.**

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

**Solution:**

1.  $x \times (-1) = -36$   
 $-1x = -36$   
 $x = \frac{-36}{-1}$   
 $x = 36$   
 $\therefore x = 36$   
 $\therefore$  It is a positive integer.
2.  $x \times (-1) = 36$   
 $-1x = 36$

$$x = \frac{36}{-1}$$

$$x = -36$$

$$\therefore x = -36$$

$\therefore$  It is a negative integer.

### Question 9.

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

#### Solution:

The integers between -15 and 15 are :

-12, -6, 0, 6 and 12

That are divisible by 2 and 3.

### Question 10.

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

#### Solution:

The integers between -5 and 5 are :

-4, -3, -2, 0, 0, 2, 3 and 4

That are divisible by 2 or 3.

### Question 11.

Evaluate:

1.  $(-20) + (-8) \div (-2) \times 3$
2.  $(-5) - (-48) \div (-16) + (-2) \times 6$
3.  $16 + 8 \div 4 - 2 \times 3$
4.  $16 \div 8 \times 4 - 2 \times 3$
5.  $27 - [5 + \{28 - (29 - 7)\}]$
6.  $48 - [18 - \{16 - (5 - 4 + 1)\}]$
7.  $-8 - \{-6(9 - 11) + 18 = -3\}$
8.  $(24 \div 12 - 9 - 12) - (3 \times 8 \div 4 + 1)$

#### Solution:

We know that, if these type of expressions that has more than one fundamental operations, we use the rule of DMAS i.e., First of all we perform D (division), then M (multiplication), then A (addition) and in the last S (subtraction).

1.  $(-20) + (-8) \div (-2) \times 3$   
 $\Rightarrow -20 + 4 \times 3$   
 $\Rightarrow -20 + 12$   
 $= -8$
2.  $(-5) - (-48) \div (-16) + (-2) \times 6$   
 $\Rightarrow (-5) - 3 + (-2) \times 6$   
 $\Rightarrow -5 - 3 - 12$

- $$\Rightarrow -8 - 12$$
- $$= -20$$
3.  $16 + 8 \div 4 - 2 \times 3$
- $$\Rightarrow 16 + 2 - 2 \times 3$$
- $$\Rightarrow 16 + 2 - 6$$
- $$\Rightarrow 18 - 6$$
- $$= 12$$
4.  $16 \div 8 \times 4 - 2 \times 3$
- $$\Rightarrow 2 \times 4 - 2 \times 3$$
- $$\Rightarrow 8 - 6$$
- $$= 2$$
5.  $27 - [5 + \{28 - (29 - 7)\}]$
- $$\Rightarrow 27 - [5 + \{28 - 22\}]$$
- $$\Rightarrow 27 - [5 + 6]$$
- $$\Rightarrow 27 - 11$$
- $$= 16$$
6.  $48 - [18 - \{16 - (5 - 4 + 1)\}]$
- $$\Rightarrow 48 - [18 - \{16 - (5 - 5)\}]$$
- $$\Rightarrow 48 - [18 - \{16 - 0\}]$$
- $$\Rightarrow 48 - [18 - 16]$$
- $$\Rightarrow 48 - 2$$
- $$= 46$$
7.  $-8 - \{-6(9 - 11) + 18 \div -3\}$
- $$\Rightarrow -8 - \{-6(-2) - 6\}$$
- $$\Rightarrow -8 - \{12 - 6\}$$
- $$\Rightarrow -8 - \{6\}$$
- $$\Rightarrow -8 - 6$$
- $$= -14$$
8.  $(24 \div 12 - 9 - 12) - (3 \times 8 = 4 + 1)$
- $$\Rightarrow (24 \div 3 - 12) - (3 \times 2 + 1)$$
- $$\Rightarrow (8 - 12) - (6 + 1)$$
- $$\Rightarrow -4 - 7$$
- $$= -11$$

### Question 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:

Required number = (Sum of all integers between 20 and 30 – Integers between 20 and 30)

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

$$\Rightarrow 20 + 30 = 50$$

$\therefore$  Required number = 50

**Question 13.**

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

**Solution:**

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

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

$$\Rightarrow 221 - 17 = 204$$

**Question 14.**

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

**Solution:**

The product of two integers = -180 One integer = 12

$$\therefore \text{Second integer} = -180 \div 12 = -15$$

**Question 15.**

1. A number changes from -20 to 30. What is the increase or decrease in the number?
2. A number changes from 40 to -30. What is the increase or decrease in the number?

**Solution:**

1.  $\therefore$  A number changes from = -20 to 30

$$\Rightarrow -20 - 30 = -50$$

$\therefore$  -50, it will be increases.

2.  $\therefore$  A number changes from = 40 to -30

$$\Rightarrow 40 - (-30)$$

$$40 + 30 = 70$$

$\therefore$  70, it will be decreases