Question:1

Determine each of the following products:

i 12 x 7

ii -15 x 8

iii -25 x -9

iv 125 x -8

Solution:

i 12 × 7 = 84

ii (-15) × 8 = -120

iii (-25) × (-9) = 225

iv 125 × (-8) = -1000

Question:2

Find each of the following products:

i 3 x -8 x 5

ii 9 x -3 x -6

iii -2 x 36 x -5

iv -2 x -4 x -6 x -8

Solution:

i 3 × -8 × 5 = $-3 \times (8 \times 5) = -120$

ii 9 × -3 × $-6 = 9 \times (3 \times 6) = 162$

iii -2 × 36 × $-5 = 36 \times (2 \times 5) = 360$

iv -2 × -4 × -6 × $-8 = (2 \times 4 \times 6 \times 8) = 384$

Question:3

Find the value of:

i 1487 × 327 + -487 × 327

ii 28945 × 99 – -28945

Solution:

i 1487 × 327 + -487 × 327 = $327\ (1487 - 487) = 327 \times 1000 = 327000$

ii 28945 × 99 – $-28945 = 28945\ (99 - (-1)) = 28945\ (99 + 1) = 2894500$

Question:4

Complete the following multiplication table:

Second Number

First Number ×	−4	−3	−2	−1	0	1	2	3	4
−4									
−3									
−2									
−1									
0									
1									
2									
3									
4									

Is the multiplication table symmetrical about the diagonal joining the upper left corner to the lower right corner?

Solution:

×	−4	−3	−2	−1	0	1	2	3	4
−4	16	12	8	4	0	−4	−8	−12	−16
−3	12	9	6	3	0	−3	−6	−9	−12
−2	8	6	4	2	0	−2	−4	−6	−8
−1	4	3	2	1	0	−1	−2	−3	−4
0	0	0	0	0	0	0	0	0	0
1	−4	−3	−2	−1	0	1	2	3	4
2	−8	−6	−4	−2	0	2	4	6	8

3	–12	–9	–6	–3	0	3	6	9	12
4	–16	–12	–8	–4	0	4	8	12	16

Yes, the table is symmetrical along the diagonal joining the upper left corner to the lower right corner.

Question:5

Determine the integer whose product with '–1' is

i 58

ii 0

iii –225

Solution:

The integer, whose product with –1 is the given number, can be found by multiplying the given number by –1.

Thus, we have:

i 58 × -1 = –58

ii 0 × $-1 = -(0 \times 1) = 0$

iii -225 × -1 = 225

Question:6

What will be the sign of the product if we multiply together

i 8 negative integers and 1 positive integer?

ii 21 negative integers and 3 positive integers?

iii 199 negative integers and 10 positive integers?

Solution:

Negative numbers, when multiplied even number of times, give a positive number. However, when multiplied odd number of times, they give a negative number. Therefore, we have:

i $negative$ 8 times × $positive$ 1 time = $\text{positive} \times \text{positive}$ = positive integer

ii $negative$ 21 times × $positive$ 3 times = $\text{negative} \times \text{positive}$ = negative integer

iii $negative$ 199 times × $positive$ 10 times = $\text{negative} \times \text{positive}$ = negative integer

Question:7

State which is greater:

i $8 + 9$ × 10 and 8 + 9 × 10

ii $8 - 9$ × 10 and 8 – 9 × 10

iii $\{-2 - 5\}$ × -6 and -2 –5 × -6

Solution:

i $8 + 9$ × 10 = 170 > 8 + 90 = 98

ii $8 - 9$ × 10 = –10 > 8 – 90 = – 82

iii $\{-2 - 5\}$ × -6 = –7 × -6 = 42 > $-2 - 5 \times -6 = -2 - -30$ = –2 + 30 = 28

Question:8

i If a × -1 = –30, is the integer a positive or negative?

ii If a × -1 = 30, is the integer a positive or negative?

Solution:

i a × -1 = –30

When multiplied by a negative integer, a gives a negative integer. Hence, a should be a positive integer.

a = 30

ii a × -1 = 30

When multiplied by a negative integer, a gives a positive integer. Hence, a should be a negative integer.

$a = -30$

Question:9

Verify the following:

i $19 \times \{7 + -3\} = 19 \times 7 + 19 \times -3$

ii $-23\{-5 + +19\} = -23 \times -5 + -23 \times +19$

Solution:

i

LHS = $19 \times \{7 + -3\} = 19 \times \{4\} = 76$

RHS = $19 \times 7 + 19 \times -3 = 133 + -57 = 76$

Because LHS is equal to RHS, the equation is verified.

ii

LHS = $-23\{-5 + 19\} = -23\{14\} = -322$

RHS = $-23 \times -5 + -23 \times 19 = 115 + -437 = -322$

Because LHS is equal to RHS, the equation is verified.

Question:10

Which of the following statements are true?

i The product of a positive and a negative integer is negative.

ii The product of three negative integers is a negative integer.

iii Of the two integers, if one is negative, then their product must be positive.

iv For all non-zero integers a and b, $a \times b$ is always greater than either a or b.

v The product of a negative and a positive integer may be zero.

vi There does not exist an integer b such that for $a > 1$, $a \times b = b \times a = b$.

Solution:

i True. Product of two integers with opposite signs give a negative integer.

ii True. Negative integers, when multiplied odd number of times, give a negative integer.

iii False. Product of two integers, one of them being a negative integer, is not necessarily positive. For example, $-1 \times 2 = -2$

iv False. For two non-zero integers a and b, their product is not necessarily greater than either a or b. For example, if $a = 2$ and $b = -2$, then, $a \times b = -4$, which is less than both 2 and –2.

v False. Product of a negative integer and a positive integer can never be zero.

vi True. If a > 1, then, $\mathrm{a} \times \mathrm{b} \neq \mathrm{b} \times \mathrm{a} \neq \mathrm{b}$

Question:11

Divide:

i 102 by 17

ii –85 by 5

iii –161 by –23

iv 76 by –19

v 17654 by –17654

vi -729 by -27

vii 21590 by –10

$viii$ 0 by –135

Solution:

i $102 \div 17 = \frac{|102|}{|17|} = \frac{102}{17} = 6$

ii $-85 \div 5 = -\frac{|-85|}{|5|} = -\frac{85}{5} = -17$

iii $-161 \div -23 = \frac{|-161|}{|-23|} = \frac{161}{23} = 7$

iv $76 \div -19 = -\frac{|76|}{|-19|} = -\frac{76}{19} = -4$

v $17654 \div -17654 = -\frac{|17654|}{|-17654|} = -\frac{17654}{17654} = -1$

vi $-729 \div -27 = \frac{|-729|}{|-27|} = \frac{729}{27} = 27$

vii 21590 $\div -10 = -\frac{|21590|}{|-10|} = -\frac{21590}{10} = -2159$

$viii$ 0 $\div -135 = -\frac{|0|}{|-135|} = -\frac{0}{135} = 0$

Question:12

Fill in the blanks:

i 296 ÷ ... = –148

ii –88 ÷ ... = 11

iii 84 ÷ ... = 12

iv ..... ÷ –5 = 25

v ..... ÷ 156 = –2

vi ..... ÷ 567 = –1

Solution:

i 296 $\div -148 = -\frac{|296|}{|-148|} = -\frac{|296|}{|148|} = -\frac{296}{148} = -2$

$\therefore 296 \div (-2) = -148$

ii – 88 $\div 11 = -\frac{|-88|}{|11|} = -\frac{|88|}{|11|} = -\frac{88}{11} = -8$

$\therefore -88 \div -8 = 11$

iii 84 $\div 12 = \frac{|84|}{|12|} = \frac{84}{12} = 7$

$\therefore 84 \div 7 = 12$

iv $25 \times (-5) = -125$

$\therefore -125 \div -5 = 25$

v $156 \times (-2) = -312$

$\therefore -312 \div 156 = -2$

vi $567 \times (-1) = -567$

$\therefore -567 \div 567 = -1$

Question:13

Which of the following statements are true?

i 0 ÷ 4 = 0

ii 0 ÷ –7 = 0

iii –15 ÷ 0 = 0

iv 0 ÷ 0 = 0

v –8 ÷ –1 = –8

vi –8 ÷ –2 = 4

Solution:

i

$\text{LHS} = \frac{|0|}{|4|} = \frac{0}{4} = 0 \quad = \text{RHS}$

Because LHS is equal to RHS, the equation is true.

ii

$\text{LHS} = -\frac{|0|}{|-7|} = -\frac{0}{7} = -0 = 0 \quad = \text{RHS}$

Because LHS is equal to RHS, the equation is true.

iii

$\text{LHS} = -\frac{|-15|}{|0|} = -\frac{15}{0} = \text{Not defined} \quad \neq \text{RHS}$

Because LHS is not equal to RHS, the equation is false.

iv

$\text{LHS} = \frac{|0|}{|0|} = \frac{0}{0} = \text{Not Defined} \quad \neq \text{RHS}$

Because LHS is not equal to RHS, the equation is false.

v

$\text{LHS} = \frac{|-8|}{|-1|} = \frac{8}{1} = 8 \quad \neq \text{RHS}$

Because LHS and RHS are not equal, the equation is false.

vi

$\text{LHS} = \frac{|-8|}{|-2|} = \frac{8}{2} = 4 \quad = \text{RHS}$

Because LHS is equal to RHS, the equation is true.

Question:14

Find the value of

36 ÷ 6 + 3

Solution:

On applying the BODMAS rule, we get:

36 ÷ 6 + 3

= 6 + 3 $On performing division$

= 9

Question:15

Find the value of

24 + 15 ÷ 3

Solution:

On applying the BODMAS rule, we get:

24 + 15 ÷ 3

= 24 + 5 $On performing division$

= 29

Question:16

Find the value of

120 – 20 ÷ 4

Solution:

On applying the DMAS rule, we get:

120 – 20 ÷ 4

= 120 – 5 $On performing division$

= 115

Question:17

Find the value of

32 – 3 × 5 + 4

Solution:

On applying the DMAS rule, we get:

32 – 3 × 5 + 4

= 32 – 15 + 4 $On performing multiplication$

= 36 – 15 $On performing addition$

= 21 $On performing subtraction$

Question:18

Find the value of

3 – 5 – 6 ÷ 3

Solution:
On applying the DMAS rule, we get:

$3 - (5 - 6 \div 3)$

$= 3 - 5 - 2$ $On per forming division$

$= 3 - 3$ $On per forming subtraction$

$= 0$

Question:19
Find the value of
$21 - 12 \div 3 \times 2$
Solution:
On applying the DMAS rule, we get:

$21 - 12 \div 3 \times 2$

$= 21 - 4 \times 2$ $On per forming division$

$= 21 - 8$ $On per forming multiplication$

$= 13$ $On per forming subtraction$

Question:20
Find the value of
$16 + 8 \div 4 - 2 \times 3$
Solution:
On applying the DMAS rule, we get:

$16 + 8 \div 4 - 2 \times 3$

$= 16 + 2 - 6$ $On per forming division and multiplication$

$= 18 - 6$

$= 12$

Question:21
Find the value of
$28 - 5 \times 6 + 2$
Solution:
On applying the DMAS rule, we get:

$28 - 5 \times 6 + 2$

$= 28 - 30 + 2$ $On per forming multiplication$

$= 30 - 30$ $On per forming addition$

$= 0$ $On per forming subtraction$

Question:22
Find the value of
$-20 \times -1 + -28 \div 7$
Solution:
On applying the DMAS rule, we get:

$-20 \times -1 + -28 \div 7$

$= 20 + -4$ $On per forming division and multiplication$

= 20 – 4

= 16

Question:23

Find the value of

$-2 + -8 \div -4$

Solution:

On applying the DMAS rule, we get:

$-2 + -8 \div -4$

$= -2 + 2 \;\; On performing division$

$= 0 \;\;\;\;\; On performing addition$

Question:24

Find the value of

$-15 + 4 \div 5 - 3$

Solution:

On applying the BODMAS rule, we get:

$-15 + 4 \div 5 - 3$

$= -15 + 4 \div 2 \;\; On simplifying brackets$

$= -15 + 2 \;\;\;\;\; On performing division$

= – 13

Question:25

Find the value of

$-40 \times -1 + -28 \div 7$

Solution:

On applying the BODMAS rule, we get:

$-40 \times -1 + -28 \div 7$

$= 40 + -4 \;\;\;\;\;\;\;\;\;\;\;\;\;\; On performing division and multiplication$

= 36

Question:26

Find the value of

$-3 + -8 \div -4 - 2 \times -2$

Solution:

On applying the BODMAS rule, we get:

$-3 + -8 \div -4 - 2 \times -2$

$= -3 + 2 + 4 \;\;\;\;\;\;\;\;\;\;\;\; On performing division and multiplication$

$= -3 + 6 \;\;\;\;\;\;\;\;\;\;\;\;\;\;\;\; On performing addition$

$= 3 \; On performing subtraction$

Question:27

Find the value of

$-3 \times -4 \div -2 + -1.$

Solution:

On applying the BODMAS rule, we get:

$-3 \times -4 \div -2 + -1$

$= -3 \times 2 + -1$ $On performing division$

$= -6 - 1$ $On performing multiplication$

$= -7$ $On performing addition$

Question:28

Simplify each of the following:

$3 - 5 - 6 \div 3$

Solution:

On applying the BODMAS rule, we get:

$3 - 5 - 6 \div 3$

$= 3 - 5 - 2$ $On performing division$

$= 3 - 3$ $On performing subtraction$

$= 0$

Question:29

Simplify each of the following:

$-25 + 14 \div 5 - 3$

Solution:

On applying the BODMAS rule, we get:

$-25 + 14 \div 5 - 3$

$= -25 + 14 \div 2$ $On simplifying brackets$

$= -25 + 7$ $On performing division$

$= -18$

Question:30

Simplify each of the following:

$25 - \frac{1}{2}\left\{5 + 4 - \left(3 + 2 - \overline{1 + 3}\right)\right\}$

Solution:

On applying the BODMAS rule, we get:

$25 - 1/2 \{5+4-(3 + 2 - \overline{1 + 3})\}$

$= 25 - \frac{1}{2}\left\{9 - \left(3 + 2 - 4\right)\right\}$ $\left[\text{Removing vinculum}\right] = 25 - \frac{1}{2}\left\{9 - \left(5 - 4\right)\right\}$ $\left[\text{Performing addition}\right] = 25 - \frac{1}{2}\left\{8\right\}$ $\left[\text{Performing subtraction}\right] = 2$

Question:31

Simplify each of the following:

$27 - \left[38 - \left\{46 - \left(15 - \overline{13 - 2}\right)\right\}\right]$

Solution:

On applying the BODMAS rule, we get:

$27 - [38 - \{46 - (15 - 11)\}]$ $On simplifying vinculum$

$= 27 - [38 - \{46 - 4\}]$ $On simplifying parentheses$

$= 27 - [38 - 42]$ $On simplifying braces$

$= 27 - (-4) = 31$

Question:32

Simplify each of the following:
$36-[18-\{14-(15-4\ \div 2\times 2)\}]$

Solution:

On applying the BODMAS rule, we get:

$36-[18-\{14-(15-4\div 2\times 2)\}]$

$= 36 -$

$$18-14-(15-2\times 2)$$

$On\ performing\ division$

$= 36-[18-\{14-(15-4)\}]$ $On\ performing\ multiplication$

$= 36-[18-\{14-11\}]$ $On simplifying\ parentheses$

$= 36-[18-3]$ $On simplifying\ braces$

$= 36-15$

$= 21$

Question:33

Simplify each of the following:
$45-[38-\{60\div 3-(6-9\ \div 3)\div 3\}]$

Solution:

On applying the BODMAS rule, we get:

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

$= 45-[38-\{60\div 3-(6-3)\div 3\}]$ $On\ performing\ division$

$= 45-[38-\{60\div 3-3\div 3\}]$ $On simplifying\ parentheses$

$= 45-[38-\{60\div 3-1\}]$ $On\ performing\ division$

$= 45-[38-\{20-1\}]$ $On\ performing\ division$

$= 45-[38-19]$ $On\ performing\ subtraction$

$= 45-19$

$= 26$

Question:34

Simplify each of the following:
$23-\left[23-\left\{23-\left(23-\overline{23-23}\right)\right\}\right]$

Solution:

On applying the BODMAS rule, we get:

$23-[23-\{23-(23-\overline{23-23})\}]$

$= 23-[23-\{23-(23-0\}]$ $On simplifying\ vinculum$

$= 23-[23-\{23-23\}]$ $On simplifying\ parentheses$

$= 23-[23-0]$ $On simplifying\ braces$

$= 23-23 = 0$

Question:35

Simplify each of the following:
$2550-\left[510-\left\{270-\left(90-\overline{80+70}\right)\right\}\right]$

Solution:

On applying the BODMAS rule, we get:

$2550-[510-\{270-(90\ )\}]$

$= 2550\ [510\ \{270\ (90\ 150)\}]$ On simplifying vinculum

$= 2550\ [510\ \{\ 270\ (\ 60)\}]$ On simplifying parentheses

$= 2550\ [510\ 330]$ On simplifying braces

$= 2550\ 180$

$= 2370$

Question:36

Simplify each of the following:

Solution:

On applying the BODMAS rule, we get:

$4 + [\{ 10 \times (25)\} \div (5)]$
$= 4 + [\{ 10 \times (25 \ 10)\} \div (5)]$ On simplifying vinculum
$= 4 + [\{ 10 \times 15\} \div (5)]$ On simplifying parentheses
$= 4 + 30$ On simplifying braces
$= 4 + 6$
$= 10$

Question:37
Solution:

On applying the BODMAS rule, we get:

Question:38
Simplify each of the following:

Solution:
On applying the BODMAS rule, we get:

$63 \ (3) \{ 2 \ \} \div 3 \{5 + (2) (1)\}$
$= 63 \ (3) \{ 2 \ 5\} \div 3 \{5 + 2\}$ On simplifying vinculum
$= 63 \ (3) (7) \div 3 \times 7$ On simplifying braces
$= 63 \ ()$
$= 63 \ 1$
$= 62$

Question:39
Simplify each of the following:
Solution:
On applying the BODMAS rule, we get:

$[29 \ (2) \{6 \ (7 \ 3)\}] \div [3 \times \{ \ 3) \times (2)\}]$
$= [29 \ (2) \{6 \ 4\}] \div 3 \times \{ 5 + 6\}$ On simplifying parentheses
$= [29 \ (2) 2] \div 3 \times 11$ On performing subtraction and addition
$= 29 + 4 \ 33$ On performing multiplication
$= 33 \ 33$
$= 1$

Question:40
Using brackets, write a mathematical expression for each of the following:
i Nine multiplied by the sum of two and five.
ii Twelve divided by the sum of one and three.
iii Twenty divided by the difference of seven and two.
iv Eight subtracted from the product of two and three.
v Forty divided by one more than the sum of nine and ten.
vi Two multiplied by one less than the difference of nineteen and six.
Solution:
i $9 \ 2 + 5$
ii $12 \div 1 + 3$
iii $20 \div (7 \ 2)$
iv $2 \times 3 \ 8$
v $40 \div \{9 + 10 + 1\}$
vi $2 \times \{(19 \ 6) \ 1\}$

Question:41
Mark the correct alternatives in each of the following:

$-1 \times -1 \times -1 \times -1 \times$ ... 500 times =

a –1 b 1 c 500 d –500

Solution:

The number of integers in the given product is even.

$\therefore -1 \times -1 \times -1 \times -1 \times$ ... 500 times

$= 1 \times 1 \times 1 \times 1 \times$ ... 500 times

$= 1$

Hence, the correct answer is option b.

Question:42

Mark the correct alternatives in each of the following:

$-1 + -1 + -1 + -1 +$ ... 500 times =

a 500 b 1 c –1 d –500

Solution:

$-1 + -1 + -1 + -1 +$ ... 500 times

$= -1 + 1 + 1 + 1 +$ ... 500 times

$= -500$

Hence, the correct answer is option d.

Question:43

Mark the correct alternatives in each of the following:

The additive inverse of –7 is

a –7 b c 7 d

Solution:

We know that, for every integer a, there exists integer $-a$ such that

$a + (-a) = 0 = -a + a$

Here, $-a$ is the additive inverse of a and a is the additive inverse of $-a$.

Now, $7 + -7 = 0 = -7 + 7$

$\therefore$ 7 is the additive inverse of –7.

Hence, the correct answer is option c.

Question:44

Mark the correct alternatives in each of the following:

The modulus of an integer x is 9, then

a $x = 9$ only b $x = -9$ only c $x = \pm 9$ d None of these

Solution:

The modulus or absolute value of an integer is its numerical value regardless of its sign. The absolute value of an integer is always non-negative.

It is given that,

Modulus of $x = |x| = 9$

Now, $|-9| = 9$ and $|9| = 9$

$\therefore x = -9$ or $x = 9$

$\Rightarrow x = \pm 9$

Hence, the correct answer is option c.

Question:45

Mark the correct alternatives in each of the following:

By how much does 5 exceed –4?

a 1 b –1 c 9 d –9

Solution:

Difference between 5 and –4 = 5 – –4 = 5 + 4 = 9

Thus, 5 exceed –4 by 9.

Hence, the correct answer is option c.

Question:46

Mark the correct alternatives in each of the following:

By how much less than –3 is –7?

a 4 b –4 c 10 d –10

Solution:

Difference between –3 and –7 = –3 – –7 = –3 + 7 = 4

Thus, –7 is less than –3 by 4.

Hence, the correct answer is option a.

Question:47

Mark the correct alternatives in each of the following:

The sum of two integers is 24. If one of them is –19, then the other is

a 43 b –43 c 5 d –5

Solution:

Sum of two integers = 24

One of the integers = –19

∴ Other integer = Sum of two integers – One of the integers

= 24 – –19

= 24 + 19

= 43

Hence, the correct answer is option a.

Question:48

Mark the correct alternatives in each of the following:

What must be subtracted from –6 to obtain –14?

a 8 b 20 c –20 d –8

Solution:
Let x be subtracted from –6 to obtain –14.

$\therefore\ -6 - x = -14$

Putting $x = 8$, we get

LHS = $-6 - 8 = -6 + -8 = -14$ = RHS

Thus, 8 must be subtracted from –6 to obtain –14.

Hence, the correct answer is option a.

Question:49
Mark the correct alternatives in each of the following:

What should be divided by 6 to get –18?

a –3 b 3 c –108 d 108
Solution:
Let x be divided by 6 to get –18.

Putting $x = -108$, we get

LHS = = RHS

Thus, –108 should be divided by 6 to get –18.

Hence, the correct answer is c.

Question:50
Mark the correct alternatives in each of the following:

Which of the following is correct?

a $-12 > -9$ b $-12 < -9$ c $-12 + 9 > 0$ d $-12 \times 9 > 0$
Solution:
We know that if a and b are two negative integers, then the integer with greater absolute value is less than the integer with smaller absolute value.

Absolute value of $-12 = |-12| = 12$

Absolute value of $-9 = |-9| = 9$

$\therefore -12 < -9$

Also,

$-12 + 9 = -3 < 0$

and $-12 \times 9 = -12 \times 9 = -108 < 0$

Hence, the correct answer is option b.

Question:51
Mark the correct alternative in each of the following:

The sum of two integers is –8. If one of the integers is 12, then the other is

a 20 b 4 c –4 d –20
Solution:

Sum of two integers = –8

One of the integers = 12

∴ Other integer = Sum of two integers – One of the integers

= –8 – 12

= –8 + –12

= –20

Hence, the correct answer is option d.

Question:52

Mark the correct alternative in each of the following:

On subtracting –14 from –18, we get

a 4 b –4 c –32 d –32

Solution:

–14 subtracted from –18

= –18 – –14

= –18 + 14

= –4

Hence, the correct answer is option b.

Question:53

Mark the correct alternative in each of the following:

–35 × 2 + –35 × 8 =

a –350 b –70 c –280 d 350

Solution:

–35 × 2 + –35 × 8

= –35 × 2 + 8 [$a \times b + a \times c = a \times (b + c)$]

= –35 × 10

= –350

Hence, the correct answer is option a.

Question:54

Mark the correct alternative in each of the following:

If $x \div 29 = 0$, then x =

a 29 b –29 c 0 d None of these

Solution:

We know that if a is a non-zero integer, then $0 \div a = 0$.

∴ $x \div 29 = 0$

⇒ $x = 0$

Hence, the correct answer is option c.

Question:55

Mark the correct alternative in each of the following:

If $x = -10 + -10 +$ ... 15 times and $y = -2 \times -2 \times -2 \times -2 \times -2$, then $x - y =$

a 118 b –118 c –182 d 182

Solution:

$x = -10 + -10 +$ ... 15 times

$= -10 + 10 +$ ... 15 times

$= -150$

$y = -2 \times -2 \times -2 \times -2 \times -2$

$= -2 \times 2 \times 2 \times 2 \times 2$ When the number of negative integers in a product is odd, the product is negative

$= -32$

$\therefore x - y = -150 - -32 = -150 + 32 = -118$

Hence, the correct answer is option b.

Question:56

Mark the correct alternative in each of the following:

If $a = -1 \times -1 \times -1 \times$ ... 100 times and $b = -1 \times -1 \times -1 \times$ ... 95 times, then $a + b =$

a –1 b –2 c 0 d 1

Solution:

$a = -1 \times -1 \times -1 \times$ ... 100 times

Here, the number of integers in the product is even.

$\therefore a = -1 \times -1 \times -1 \times$ ... 100 times

$= 1 \times 1 \times 1 \times$ ... 100 times

$= 1$

$b = -1 \times -1 \times -1 \times$ ... 95 times

Here, the number of integers in the product is odd.

$\therefore b = -1 \times -1 \times -1 \times$ ... 95 times

$= -1 \times 1 \times 1 \times$ ... 95 times

$= -1$

So,

$a + b = 1 + -1 = 0$

Hence, the correct answer is option c.

Question:57

Mark the correct alternative in each of the following:

|| 3 – 12| – 4| =

a –5 b 5 c 7 d –7

Solution:

|| 3 – 12| – 4|

= || 3 + –12| – 4|

= || –9| – 4|

= |9 – 4| Absolute value of an integer is its numerical value regardless of its sign

= |5|

= 5

Hence, the correct answer is option b.

Question:58

Mark the correct alternative in each of the following:

If the difference of an integer *a* and –9 is 5, then *a* =

a 4 b 5 c –4 d –9

Solution:

a – –9 = 5 Given

⇒ *a* + 9 = 5

Putting *a* = –4, we get

LHS = –4 + 9 = 5 = RHS

∴ *a* = –4

Hence, the correct answer is option c.

Question:59

Mark the correct alternative in each of the following:

The sum of two integers is 10. If one of them is negative, then the other has to be

a negative b positive

c may be positive or negative d None of these

Solution:

It is given that the sum of two integers is 10, which is a positive integer.

But, we know that the sum of two negative integers is always a negative integer.

So, if the sum of two integers is positive and one of them is negative, then the other has to be positive.

For example,

–2 + 12 = 10

–5 + 15 = 10

Thus, the other integer has to be positive.

Hence, the correct answer is option b.

Question:60

Mark the correct alternative in each of the following:

If $x = -1 \times -1 \times -1 \times -1 \times$ ... 25 times, $y = -3 \times -3 \times -3$, then xy

a –27 b 27 c 26 d –26

Solution:

$x = -1 \times -1 \times -1 \times -1 \times$ ... 25 times

The number of integers in the given product is odd.

$\therefore x = -1 \times -1 \times -1 \times -1 \times$ ... 25 times

$= -1 \times 1 \times 1 \times$ ... 25 times

$= -1$

$y = -3 \times -3 \times -3$

The number of integers in the given product is odd.

$\therefore y = -3 \times -3 \times -3$

$= -3 \times 3 \times 3$

$= -27$

So,

$xy = -1 \times -27 = 27$ Product of two negative integers is always positive

Hence, the correct answer is option b.