Worksheet -8 Subject: - Mathematics Class: - VII Teacher: - Ms. Neeru

Name: _____ Class & Sec: _____ Roll No. _____ Date: 28.04.2020

EXERCISE 1.3

1. Find each of the following products:

(a) $3 \times (-1)$ (b) $(-1) \times 225$

(c) $(-21) \times (-30)$ (d) $(-316) \times (-1)$

(e) $(-15) \times 0 \times (-18)$ (f) $(-12) \times (-11) \times (10)$

(g) $9 \times (-3) \times (-6)$ (h) $(-18) \times (-5) \times (-4)$

(i) $(-1) \times (-2) \times (-3) \times 4$ (j) $(-3) \times (-6) \times (-2) \times (-1)$

2. Verify the following:

(a) $18 \times [7 + (-3)] = [18 \times 7] + [18 \times (-3)]$

(b) $(-21) \times [(-4) + (-6)] = [(-21) \times (-4)] + [(-21) \times (-6)]$

3. (i) For any integer a, what is $(-1) \times a$ equal to?

(ii) Determine the integer whose product with (-1) is

(a) -22 (b) 37 (c) 0

4. Starting from $(-1) \times 5$, write various products showing some pattern to show $(-1) \times (-1) = 1$.

5. Find the product, using suitable properties:

(a) $26 \times (-48) + (-48) \times (-36)$ (b) $8 \times 53 \times (-125)$

(c) $15 \times (-25) \times (-4) \times (-10)$ (d) $(-41) \times 102$

(e) $625 \times (-35) + (-625) \times 65$ (f) $7 \times (50 - 2)$

(g) $(-17) \times (-29)$ (h) $(-57) \times (-19) + 57$

6. A certain freezing process requires that room temperature be lowered from 40°C at the rate of 5°C every hour. What will be the room temperature 10 hours after the process begins?

7. In a class test containing 10 questions, 5 marks are awarded for every correct answer and (–2) marks are awarded for every incorrect answer and 0 for questions not attempted.

(i) Mohan gets four correct and six incorrect answers. What is his score?

(ii) Reshma gets five correct answers and five incorrect answers, what is her score?

(iii) Heena gets two correct and five incorrect answers out of seven questions she attempts. What is her score?

8. A cement company earns a profit of Rs 8 per bag of white cement sold and a loss of Rs 5 per bag of grey cement sold.

(a) The company sells 3,000 bags of white cement and 5,000 bags of grey cement in a month. What is its profit or loss?

Ex 1.3, 2

Verify the following:

(a) $18 \times [7 + (-3)] = [18 \times 7] + [18 \times (-3)]$

$18 \times [7 + (-3)] = [18 \times 7] + [18 \times (-3)]$

LHS	RHS
$18 \times [7 + (-3)]$	$[18 \times 7] + [18 \times (-3)]$
$= 18 \times [7 - 3]$	$= 126 - 54$
$= 18 \times 4$	$= 72$
$= 72$	

18×4: $18 \times 4 = 72$ (carry 3)

18×7: $18 \times 7 = 126$ (carry 5)

18×3: $18 \times 3 = 54$ (carry 2)

$126 - 54 = 72$ (borrow 0 12)

Since LHS = RHS

Hence verified

Ex 1.3, 2

Verify the following:

(b) $(-21) \times [(-4) + (-6)] = [(-21) \times (-4)] + [(-21) \times (-6)]$

LHS	RHS
$(-21) \times [(-4) + (-6)]$	$[(-21) \times (-4)] + [(-21) \times (-6)]$
$= -21 \times [-4 - 6]$	$= [21 \times 4] + [21 \times 6]$
$= -21 \times -[4 + 6]$	$= 84 + 126$
$= -21 \times -10$	$= 210$
$= 21 \times 10$	
$= 210$	

$21 \times 4 = 84$

$21 \times 6 = 126$

$126 + 84 = 210$ (carry 1 1)

Since LHS = RHS

Hence verified

Ex 1.3, 3

(i) For any integer a, what is $(-1) \times a$ equal to?

$-1 \times a$

$= -a$

Ex 1.3, 3

(ii) Determine the integer whose product with (-1) is

(a) -22 (b) 37 (c) 0

(a) $-1 \times \_\_ = -22$

$-1 \times \mathbf{22} = -22$

So, answer is **22**

(b) $-1 \times \_\_ = 37$

$-1 \times \mathbf{-37} = 37$

So, answer is **−37**

(c) $-1 \times \_\_ = 0$

$-1 \times \mathbf{0} = 0$

So, answer is **0**

Ex 1.3, 4

Starting from $(-1) \times 5$, write various products showing some pattern to show $(-1) \times (-1) = 1$.

$-1 \times 5 = -5$

$-1 \times 4 = -4 = -5 + 1$

$-1 \times 3 = -3 = -4 + 1$

$-1 \times 2 = -2 = -3 + 1$

$-1 \times 1 = -1 = -2 + 1$

$-1 \times 0 = 0 = -1 + 1$

$-1 \times -1 = 1 = 0 + 1$

This is our pattern

Ex 1.3, 5

Find the product, using suitable properties:

(a) $26 \times (-48) + (-48) \times (-36)$

$26 \times (-48) + (-48) \times (-36)$

Taking (−48) common

$= (-48) \times [26 + (-36)]$

$= (-48) \times [26 - 36]$

$= (-48) \times -[-26 + 36]$

$= (-48) \times -[36 - 26]$

$= (-48) \times -10$

$= 48 \times 10$

$= \mathbf{480}$

Ex 1.3, 5

Find the product, using suitable properties:

(b) $8 \times 53 \times (-125)$

$8 \times 53 \times (-125)$

$= 53 \times (-125 \times 8)$

$125 \times 8 = 1000$ (carry 2 4)

$= 53 \times (-1000)$

$= \mathbf{-53000}$

Rough

We multiply 125 & 8 as $5 \times 8 = 40$ ends with 0

Ex 1.3, 5

Find the product, using suitable properties:

(c) $15 \times (-25) \times (-4) \times (-10)$

$15 \times (-25) \times (-4) \times (-10)$

$= 15 \times [(-25) \times (-4)] \times (-10)$

$= 15 \times [25 \times 4] \times (-10)$

$= 15 \times 100 \times (-10)$

$= \mathbf{-15000}$

Rough

We multiply 25 & 4

as $25 \times 4 = 100$

ends with 0

Ex 1.3, 5

Find the product, using suitable properties:

(d) $(-41) \times 102$

$(-41) \times 102$

$= (-41) \times (100 + 2)$

$= (-41) \times 100 + (-41) \times 2$

$= -4100 - 82$

$= -(4100 + 82)$

$= \mathbf{-4182}$

Ex 1.3, 5

Find the product, using suitable properties:

(e) $625 \times (-35) + (-625) \times 65$

$625 \times (-35) + (-625) \times 65$

$= 625 \times (-35) + 625 \times (-65)$

Taking 625 common

$= 625 \times [(-35) + (-65)]$

$= 625 \times [-35 - 65]$

$= 625 \times -[35 + 65]$

$= 625 \times -100$

$= \mathbf{-62500}$

Ex 1.3, 5

Find the product, using suitable properties:

(f) $7 \times (50 - 2)$

$7 \times (50 - 2)$

$= 7 \times 50 - 7 \times 2$

$= 7 \times 5 \times 10 - 14$

$= 350 - 14$

$= \mathbf{336}$

$$\begin{array}{r} {\scriptstyle 4\ 10} \\ 3\ \not{5}\ \not{0} \\ -\ \ 1\ 4 \\ \hline 3\ 3\ 6 \end{array}$$

Ex 1.3, 5

Find the product, using suitable properties:

(g) $(-17) \times (-29)$

$(-17) \times (-29)$

$= 17 \times 29$

$= 17 \times (30 - 1)$

$= 17 \times 30 - 17 \times 1$

$= 510 - 17$

$= \mathbf{493}$

Ex 1.3, 5

Find the product, using suitable properties:

(h) $(-57) \times (-19) + 57$

$(-57) \times (-19) + 57$

$= 57 \times 19 + 57$

Taking 57 common

$= 57 \times (19 + 1)$

$= 57 \times 20$

$= 57 \times 2 \times 10$

$= 114 \times 10$

$= \mathbf{1140}$

$$\begin{array}{r} {\scriptstyle 1} \\ 5\ 7 \\ \times\ \ 2 \\ \hline 1\ 1\ 4 \end{array}$$