

INTEGERS

Subtopic: Properties of multiplication of integers

Section 1

1. Mark T for True and F for False

1a. Euler was first to attempt to prove $(-1) \times (-1) = 1$.

1b. Product of two negative integers is a -ve integer.

2. Choose the correct answer.

2a. $a \times (b \times c) = (a \times b) \times c$ is the

- a) Associative law
- b) Distributive law
- c) Commutative law
- d) Additive law

2b. $a \times (b + c) = a \times b + a \times c$ is the

- a) Associative law
- b) Commutative law
- c) Distributive law
- d) Additive law

3. Fill in the blanks

3a. If $a \times b$ is an integer for integers a and b , it means integers is _____ under _____.

3b. _____ is the multiplicative identity for integers.

4. Match the following.

| Column 1 | Column 2 | Answer here | |
|-------------------------|--------------------|-------------|--|
| a) $3 \times (-4)$ | 1) 0 | a) | |
| b) $(-17) \times 0$ | 2) is an integer | b) | |
| c) $(-15) \times (-23)$ | 3) $(-4) \times 3$ | c) | |
| d) $(-30) \times 12$ | 4) 182 | d) | |
| e) $(-14) \times (-13)$ | 5) -360 | e) | |

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Section 2

5. Give an example of two integers that shows multiplication is commutative for integers.
6. With two examples explain the associativity of integers for multiplication.
7. Find the product using suitable properties : $-26 \times (-48) + (-48) \times (-36)$
8. Verify $-14 \times 13 = 13 \times (-14)$. What can you conclude?

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Section 3

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

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

- a) 8 negative integers and 3 positive integers?
- b) 5 negative integers and 4 positive integers?
- c) (-1) , twelve times?
- d) (-1) , $2k$ times, k is a natural number?