

EXERCISE 5(B)

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1. Consider two whole numbers a and b such that a is greater than b .

(i) Is $a - b$ a whole number? Is this result always true?

(ii) $b - a$ a whole number? Is this result always true?

Solution:

Let us take $a = 2$ and $b = 1$

(i) $a - b = 2 - 1$

$= 1$

Yes, $a - b$ is a whole number and the result will always remain true

(ii) $b - a = 1 - 2$

$= -1$

No, $(b - a)$ cannot be a whole number and this result will always remain true.

2. Fill in the blanks :

(i) $8 - 0 = \dots\dots\dots$ and $0 - 8 = \dots\dots\dots$

$8 - 0 \neq 0 - 8$, this shows subtraction of whole numbers is not $\dots\dots\dots$

(ii) $5 - 10 = \dots\dots\dots$, which is not a $\dots\dots\dots$

\Rightarrow Subtraction of $\dots\dots\dots$ is not closed.

(iii) $7 - 18 = \dots\dots\dots$ and $(7 - 18) - 5 = \dots\dots\dots$

$18 - 5 = \dots\dots\dots$ and $(7 - 18) - 5 = \dots\dots\dots$

Is $(7 - 18) - 5 = 7 - (18 - 5)$?

\Rightarrow Subtraction of whose numbers is not $\dots\dots\dots$

Solution:

(i) $8 - 0 = 8$ and $0 - 8 = -8$

$8 - 0 \neq 0 - 8$, this shows subtraction of whole numbers is not **commutative**

(ii) $5 - 10 = -5$, which is not a **whole number**

\Rightarrow Subtraction of **whole numbers** is not closed.

(iii) $7 - 18 = -11$ and $(7 - 18) - 5 = -16$

$18 - 5 = 13$ and $(7 - 18) - 5 = -6$

Is $(7 - 18) - 5 = 7 - (18 - 5)$?

No $(7 - 18) - 5 \neq 7 - (18 - 5)$

\Rightarrow Subtraction of whole numbers is not **associative**

3. Write the identity number, if possible for subtraction.

Solution:

It is not possible because for subtraction no identity number exists.

4. Write the inverse, if possible for subtraction of whole numbers?

Solution:

Since subtraction for every non-zero whole number does not have identity number, its inverse does not exist.

5. $12 \times (9 - 6) = \dots\dots\dots = \dots\dots\dots$

$12 \times 9 - 12 \times 6 = \dots\dots\dots = \dots\dots\dots$

Is $12 \times (9 - 6) = 12 \times 9 - 12 \times 6$? $\dots\dots\dots$

Is this type of result always true? $\dots\dots\dots$

Name the property used here $\dots\dots\dots$

Solution:

$12 \times (9 - 6) = 12 \times 3 = 36$

$12 \times 9 - 12 \times 6 = 108 - 72 = 36$

Is $12 \times (9 - 6) = 12 \times 9 - 12 \times 6$? **Yes**

Is this type of result always true? **Yes**

Name the property used here **Distributive property**

6. $(16 - 8) \times 24 = \dots\dots\dots = \dots\dots\dots$

$16 \times 24 - 8 \times 24 = \dots\dots\dots - \dots\dots\dots = \dots\dots\dots$

Is $(16 - 8) \times 24 = 16 \times 24 - 8 \times 24$? $\dots\dots\dots$

Is the type of result always true? $\dots\dots\dots$

Name the property used here $\dots\dots\dots$

Solution:

$(16 - 8) \times 24 = 8 \times 24 = 192$

$16 \times 24 - 8 \times 24 = 384 - 192 = 192$

Is $(16 - 8) \times 24 = 16 \times 24 - 8 \times 24$? **Yes**

Is the type of result always true? **Yes**

Name the property used here **Distributivity.**