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සති පාසල

Subject: - Mathematics

Week: - 11 (1<sup>st</sup> Term)

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Grade: - 8

(Learning Time 2 Hours)

Factors

7.1 The highest common factor (HCF) of several numbers

- When a number is written as a product of two whole numbers, those numbers are called factors of the original numbers.
- The HCF of two or more numbers is the largest of all the common factors of the given numbers. That is the largest by which all the given numbers are divisible is their HCF.
- Recall the subject points about “how to find the HCF of several numbers by writing each product of prime numbers in Grade 7 and do the review exercise.

7.2 The highest common factor of several algebraic terms

Let us find the HCF of the algebraic terms  $4x$ ,  $8xy$  and  $6xyz$ .

Let us write each term as a product of its factors.

$$\begin{aligned}4x &= 2 \times 2 \times x \\8xy &= 2 \times 2 \times 2 \times x \times y \\6xyz &= 2 \times 3 \times x \times y \times z\end{aligned}$$

Here, the coefficient of each algebraic term is written as a product of its prime factors and the unknowns are separated and written as a product.

The common factors of all three algebraic terms,  $4x$ ,  $8xy$  and  $6xyz$  are 2 and  $x$ .

The HCF of the algebraic terms,  $4x$ ,  $8xy$  and  $6xyz$  is the product of the factors which are common to all three terms.

$$\begin{aligned}\therefore \text{The HCF of } 4x, 8xy \text{ and } 6xyz &= 2 \times x \\&= 2x\end{aligned}$$

- By studying the example in page 82, do the exercise 7.1

7.3 Writing an algebraic expression as a product of its factors

- Firstly, find the highest common factor of the terms of the algebraic expression.
- Take this HCF as one factor and the expression which is obtained by dividing each term of the algebraic expression by this HCF as the other factors and write the algebraic expression as a product of these two factors.
- By studying the examples in page 84, do the exercise 7.2