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FUNDAMENTAL CONCEPTS

SUBJECT : MATHEMATICS

CHAPTER NUMBER:18

CHAPTER NAME: FUNDAMENTAL CONCEPTS

SUBTOPIC : Algebra, Signs and Symbols, Writing a given statement in Algebraic form

PERIOD NO: 1

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Learning outcomes

- Students will be able to write a given statement in algebraic form.
- Students will be able to write a given algebraic form in suitable statement.
- Students will develop application skill.

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- Students will Learn fundamental concepts of algebra with the help of a video .
- https://www.youtube.com/watch?v=Hs6zRAOQ6LA(9.27)

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Constant : A symbol having a fixed numerical value is called a constant.
OR
The number before an alphabet (variable) is called a constant.

Variable : A symbol which takes various numerical values is called a variable.
OR
The alphabet after a number (constant) is called a variable.

In the formulas d = 2r; 2 is a constant whereas, r and d are variables.

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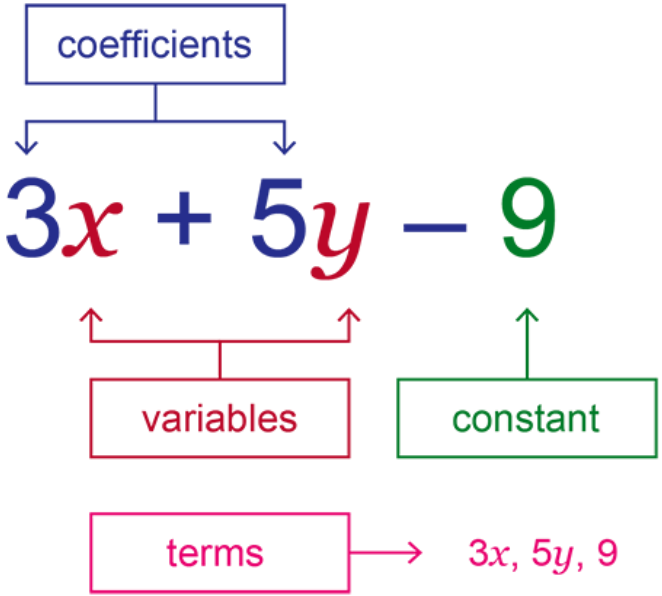

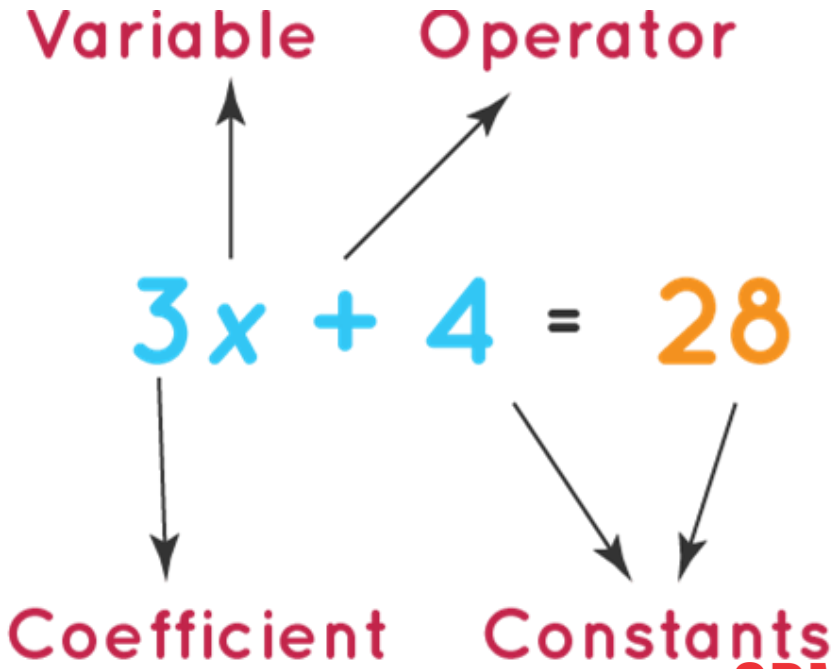

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Evaluation Question EX-18A

1. Express each of the following statements in algebraic form:

(i) The sum of 8 and x is equal to y.

(ii) x decreased by 5 is equal to y.

(iii) The sum of 2 and x is greater than y.

(iv) The sum of x and y is less than 24.

(v) 15 multiplied by m gives 3n.

(vi) Product of 8 and y is equal to 3x.

(vii) 30 divided by b is equal to p.

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Evaluation Question

(viii) z decreased by 3x is equal to y.

(ix) 12 times of x is equal to 5z.

(x) 12 times of x is greater than 5z.

(xi) 12 times of x is less than 5z.

(xii) 3z subtracted from 45 is equal to y.

(xiii) 8x divided by y is equal to 2z.

(xiv) 7y subtracted from 5x gives 8z.

(xv) 7y decreased by 5x gives 8z.

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Evaluation Question

Solution:

(i) The sum of 8 and x is equal to y in algebraic form is written as,

$8 + x = y$

(ii) x decreased by 5 is equal to y in algebraic form is written as,

$x - 5 = y$

(iii) The sum of 2 and x is greater than y in algebraic form is written as,

$2 + x > y$

(iv) The sum of x and y is less than 24 in algebraic form is written as,

$x + y < 24$

(v) 15 multiplied by m gives 3n in algebraic form is written as,

$15 \times m = 3n$

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Evaluation Question

(vi) Product of 8 and y is equal to 3x in algebraic form is written as,

$8 \times y = 3x$

(vii) 30 divided by b is equal to p in algebraic form is written as,

$30 \div b = p$

(viii) z decreased by 3x is equal to y in algebraic form is written as,

$z - 3x = y$

(ix) 12 times of x is equal to 5z in algebraic form is written as,

$12 \times x = 5z$

(x) 12 times of x is greater than 5z in algebraic form is written as,

$12 \times x > 5z$

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Evaluation Question

(xi) 12 times of x is less than 5z in algebraic form is written as,

$12 \times x < 5z$

(xii) 3z subtracted from 45 is equal to y in algebraic form is written as,

$45 - 3z = y$

(xiii) 8x divided by y is equal to 2z in algebraic form is written as,

$8x \div y = 2z$

(xiv) 7y subtracted from 5x gives 8z in algebraic form is written as,

$5x - 7y = 8z$

(xv) 7y decreased by 5x gives 8z in algebraic form is written as,

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Evaluation Question

2. For each of the following algebraic expressions, write a suitable statement in words:

(i) $3x + 8 = 1$ **(ii) $7 - y > x$**

(iii) $2y - x < 12$ **(iv) $5 \div z = 5$**

(v) $a + 2b > 18$ **(vi) $2x - 3y = 16$**

(vii) $3a - 4b > 14$ **(viii) $b + 7a < 21$**

(ix) $(16 + 2a) - x > 25$ **(x) $(3x + 12) - y < 3a$**

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Evaluation Question

Solution:

(i) The algebraic expression $3x + 8 = 15$ in words is expressed as,

3x plus 8 is equal to 15

(ii) The algebraic expression $7 - y > x$ in words is expressed as,

7 decreased by y is greater than x

(iii) The algebraic expression $2y - x < 12$ in words is expressed as,

2y decreased by x is less than 12

(iv) The algebraic expression $5 \div z = 5$ in words is expressed as,

5 divided by z is equal to 5

(v) The algebraic expression $a + 2b > 18$ in words is expressed as,

a increased by 2b is greater than 18

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Additional Homework

1. Write the following using numbers, literals and signs of basic operations:

(i) The sum of 6 and x.

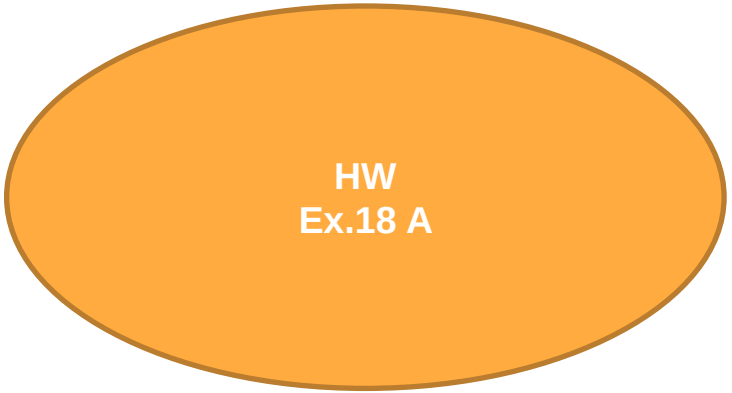
(ii) 3 more than a number y.

(iii) One-third of a number x.

(iv) One-half of the sum of number x and y.

(v) Number y less than a number 7.

(vi) 7 taken away from x.



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