Module 3.A : Algebra- Solving Equations

Learning Objectives:

1. **Evaluate an equation if the variables are specified.**
2. **Evaluate an absolute value equality if the variables are specified.**
3. **Solve a linear equation.**
4. **Solve a system of linear equations.**
5. **Solve a quadratic equation.**
6. **Solve an application word problem.**
7. **Solve a linear inequality.**
8. **Solve a quadratic inequality.**
9. **Solve an absolute value inequality.**

SECTION 1 : Evaluate an equation if the variables are specified.

EXERCISE 1

If $x = -5$ and $y = 6$, then $4y + 3x =$

SOLUTION

$4(6) + 3(-5) = 24 - 15 = 9$

SECTION 2 : Evaluate an absolute value equality if the variables are specified.

EXERCISE 2

Evaluate a) $|x| - |5x - 3|$ if x = - 6. b) $\dfrac{|x|}{|2 - x|} - 3|x|$ if x = -2.

SOLUTION

a) $|-6| - |5(-6) - 3| = 6 - |-30 - 3| = 6 - |-33| = 6 - 33 = -27$

b) $\dfrac{|-2|}{|2 - (-2)|} - 3|-2| = \dfrac{2}{|2 + 2|} - 3(2) = \dfrac{2}{4} - 6 = \dfrac{1}{2} - \dfrac{6}{1} = \dfrac{1}{2} - \dfrac{12}{2} = -\dfrac{11}{2}$

ASSESSMENT 1

_____1. If $x = -3$ and $y = 4$, then $5y - 2x =$

A -23 **B** -7 **C** 14 **D** 26 **E** I do not know

_____2. Evaluate $|2x| - |x - 3|$ if x = - 2.

A 3 **B** 1 **C** -1 **D** 5 **E** I do not know