**SUBSTITUTION**

When an expression includes **variables** (letters) we can **evaluate** (find a numerical answer) the expression if we are given numerical values for the variables. We see this regularly when using formulas.

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| Example 1:  A = l x w  Find the area of a rectangle if the length if 8cm and the width is 6cm. | Example 2:  Evaluate 2x + 1, for x = 4 |
| **When substituting, it is important to use brackets 🡪 especially if you have integer values.**  **DON’T forget to follow BEDMAS!** | |
| Example 3:  Evaluate –7y, for y = –3 | Example 4: Evaluate  a + 2b, if a = 8 and b = –3 |
| Example 5: Evaluate  a(b + 2c), if a = 2, b = 3, c = 5 | Example 6: Evaluate  a2 – 2b + c, if a = –1, b = –3, c = 2 |

**Practice: Substitution**

**Evaluate** a-f given x = 3, y = 2, and z = -1

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| a. | b. | c. |
| d. x + y + z | e. xyz | f. |
| g. A movie theatre wants to compare the volumes of popcorn in two containers, a cube with edge length of 8.1cm and a cylinder with a radius of 4.5cm and height of 8.0cm. Which container holds more popcorn?  Formula: Cube  Cylinder | | |
| **ANSWERS: a) 27/8, b) 9.61. c)-5/6, d) 4, e) -6, f) -5, g) the cube** | | |