Math 8 Name:

Mr. Cadman **Algebraic Expression & Equations**  Blk:

|  |  |
| --- | --- |
| Pick a number from 1 to 25. |  |
| Add 9 to it. |  |
| Multiply the result by 3. |  |
| Subtract 6 from the current answer. |  |
| Divide this answer by 3. |  |
| Now subtract your original number. |  |
| Equals | 7 |

What are some jobs that you use algebra for?

Police Officer, Mechanic, Plumber, Electrician, Doctors/Nurse, Computer Programmer, Landscaper.

A **variable** is a letter or symbol representing a quantity that can change.

Example: 4t + 3

The variable in this expression is “t”. Any letter of the alphabet can be used as a variable.

A **numerical coefficient** is the number by which a variable (letter) is multiplied by.

Example: 4t + 3

The numerical coefficient in this expression is 4. Numerical coefficients are always attached to a variable (letter).

A **constant term** is a number that does not change (stays constant).

Example: 4t + 3

The constant term in this expression is 3.Constant terms can be a whole number, a decimal, or a fraction, but are never attached to a variable (letter).

Find the variable, numerical coefficient, and constant term in each expression:

1. 8k - 6 variable = k, numerical coefficient = 8, constant term = -6
2. 2.3 – 16x variable = x, numerical coefficient = -16, constant term = 2.3
3. -¼s + 7 variable = s, numerical coefficient = -¼, constant term = 7

An **expression** is a mathematical phrase made up of numbers and/or variables connected by operations (+, -, x, ÷). Example: 3f + 4

An **equation** is exactly the same as ab expression except it has an equals sign (=).

For example… 3f + 4 *is an expression* 3f + 4 = 20 *is an equation*

Determine which of the following are expressions or equations.

1. ½t – 3 expression
2. -6 + 8 = 12x equation
3. 0.4 – 13d expression

Writing Expressions or Equations

Step 1:What are we trying to find?

Step 2: Assign a variable for the number.

Step 3: Write down what the variable represents.

“Let n = a number”

Step 4: Write an equation.

Convert the following phrases to algebraic expressions…

1. 5 more than a number n+5
2. A number decreased by 4 n-5
3. Double a number add 3 2n+3
4. Eight less a number n-8
5. A number divided by 20 n/20

When 6 is added to 4 times a number, the result is 50. What is the equation?

6 + 4n = 50