$\qquad$
$\qquad$

Do Now: What is the domain of the relation shown below? $\{(4,2),(1,1),(0,0),(1,-1),(4,-2)\}$

1) $\{0,1,4\}$
2) $\{-2,-1,0,1,2\}$
3) $\{-2,-1,0,1,2,4\}$
4) $\{-2,-1,0,0,1,1,1,2,4,4\}$

Aim: How Do We Evaluate Functions Algebraically?

| $\mathbf{x}$ | $\mathbf{f}(\mathbf{x})$ |
| :---: | :---: |
| 0 | -8 |
| 1 | -6 |
| 2 | -4 |
| 3 | -2 |
| 4 | 0 |
| 5 | 2 |
| 6 | 4 |



The most popular function notation is $f(x)$ which is read " $f$ of $x$ ". This is NOT the multiplication of $f$ times $x$.



If the questions asks to "find $f(\#)$ " then I need to $\qquad$

1. Evaluate the following function: $\mathbf{f}(\mathbf{x})=\mathbf{2 x}+\mathbf{1 3}$

| Find $\mathrm{f}(4)$ | Find $\mathrm{f}(-1)$ |
| :--- | :--- |
|  |  |
|  |  |

2. Evaluate the following function: $\mathbf{h}(\mathbf{x})=\mathbf{- 3 x}+\mathbf{5}$

| Find $\mathrm{h}(12)$ | Find $\mathrm{h}(-10)$ |
| :--- | :--- |
|  |  |
|  |  |

3. Evaluate the following function: $\mathbf{g}(\mathbf{x})=\mathbf{4} \mathbf{x}^{\mathbf{2}}+\mathbf{7}$

| Find $g(2)$ | Find g(-4) |
| :--- | :--- |
|  |  |
|  |  |

If the questions asks to "find $f(x)=\#$ " then I need to
4. Evaluate the following function: $\mathbf{f}(\mathbf{x})=\mathbf{2 x}+\mathbf{3}$

| Find $f(x)=11$ | Find $f(x)=-5$ |
| :--- | :--- |

5. Evaluate the following function: $\mathbf{g}(\mathbf{x})=3 \mathbf{x}^{\mathbf{2}}+\mathbf{7}$

| Find $g(x)=34$ | Find $g(x)=82$ |
| :--- | :--- |

6. Evaluate the following function: $\mathbf{h}(\mathbf{x})=\mathbf{- 5 x}+\mathbf{1}$
a) Find $h(-8)$
b) Find $h(x)=-4$
7. Evaluate the following function: $f(x)=3 x+4$
a. Find $f(2)$
b. Find $x$ if $f(x)=19$

Name:
UNIT 6
$\qquad$ Date: $\qquad$
LESSON 4

## HW\#

1. Given: The function $f(x)=4 x+1$.
a) What is $f(8)$ ?
b) What is $x$ when $f(x)=25$ ?
b) What is $x$ when $g(x)=17$ ?
2. Given: The function $h(x)=x^{2}-2 x$. What is $h(5)$ ?
b) What is $x$ when $h(x)=144$ ?

Directions: Determine if the following are functions. Write yes or no and explain your answer.

8. The function $w(x)=60 x$ represents the number of words $w(x)$ you can type in $x$ minutes. How many words can you type in 9 minutes?
9. What is a value of $x$ that makes the relation $\{(2,4),(3,6),(x, 8)\}$ a function? Explain your answer.
10. Determine which relation is a function. Justify your answers.
a. The assignment of the members of a football team to jersey numbers.
b. The assignment of teachers to the students enrolled in each of their classes.

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