# Agenda

- Warm-Up (Mon)
- Notes
- HW (Pracce, 2 pages)

TEKS Check
TEST tmr!!

Progress Report Due Wed
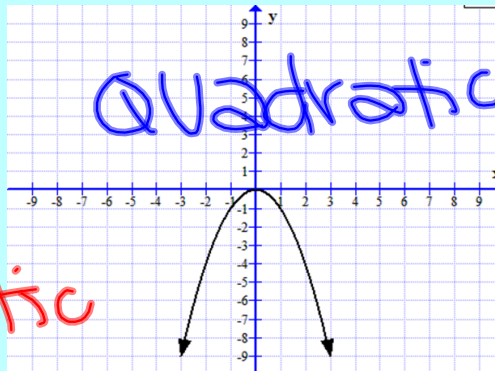
# Evaluating Functions

Turn in Funcons & Relaons HW NOW!

## Warm-Up

1. What is the parent funcon of the graph shown below?

QUadratic

Linear

QUADratic

A. $y = -x$

B. $y = -x^2$

C. $y = x$

D. $y = x^2$    Q

2. Which of the following represents the expression: the quanty 6 plus triple a number, less than the quoent of the same number and two?

$$\frac{x}{2} - (6 + 3x)$$

A. $2x - (6 + 3x)$

B. $\dfrac{x}{2} - (6 + 3x)$

C. $(6 + 3x) - \dfrac{x}{2}$

D. $\dfrac{x}{2} - 6 + 3x$

# End of the 2ⁿᵈ Six Weeks - Thursday 11/7

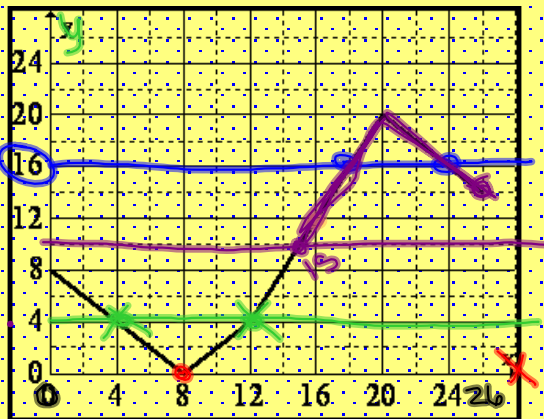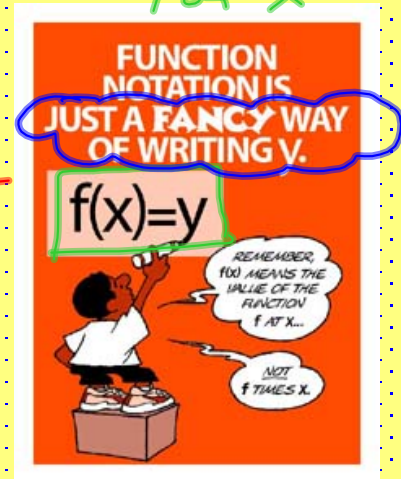| Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|
| 28<br><br>Functions/Relations Hw Due | 29<br><br>TEKS Check TEST | 30<br><br>*Wed PM* | 31<br><br>*Thurs AM* | 1<br><br>-Quiz<br><br>-Hw 2.4 Due |
| 4<br><br>Extra Credit Due<br>(http://www.mskmathrhs.weebly.com) | 5<br><br>-TEKS Check Test Corrections due 5PM<br><br>-All late Hw due (2.3, Functions/Relations, 2.4)<br><br>*Tues PM* | 6<br><br>Bathroom Passes Due | 7<br><br>End of 2ⁿᵈ six weeks! | 8<br><br>3ʳᵈ six weeks |

# Evaluating Functions ~p. 42~

## Function Notation

If x is the independent variable and y is the dependent variable, then the function notation for y is f(x).

"f of x"

| Equation | Input | Output |
|----------|-------|--------|
| f(x) = 4x - 3  *y* | independent  X | dependent  f(x)  y |

**FUNCTION NOTATION IS JUST A FANCY WAY OF WRITING y.**

f(x)=y

REMEMBER, f(x) MEANS THE VALUE OF THE FUNCTION f AT x...

NOT f TIMES x.

**Use the graph to answer the following questions:**

a) Is this graph a function? How do you know?

Yes, passes VLT

b) What is the domain and range of the graph shown?

D: $0 \leq x \leq 26$
R: $0 \leq y \leq 20$

c) What is the value of f(8)?

$x=8$ , $f(8)=0$        f(x)

d) What is the value of f(16)?

$x=16$ , $f(16)=12$

e) For what value or values of x does f(x) = 4?

y=4        x=4 or x=12

f) For what value or values of x does f(x) = 16?

y=16        x=18 or x=24

g) For what values of x is f(x) greater than or equal to 10?

$y \geq 10$        $15 \leq x \leq 26$

# Evaluating Functions *p.43*

*PLUG IT IN:*

To find f(x), simply ~~substitute~~ the value of x into the equation everywhere you see an x and simplify.

Evaluate $f(x) = 4x - 3$ when the domain is $\{-1, 0, 2\}$

$f(-1) = 4(-1) - 3 = -7$
$f(0) = 4(0) - 3 = -3$
$f(2) = 4(2) - 3 = 5$

$\{-7, -3, 5\}$

*use parenthesis!!*

## Evaluate the following functions:

3.   $f(x) = x - 9$
$f(3) = 3 - 9$
$\boxed{-6}$

4.   $f(x) = 2x - 1$
$f(4) = 2(4) - 1$
$\boxed{7}$

5.   $g(x) = x^2 - 3x + 2$
$g(-2) =$
$(-2)^2 - 3(-2) +$
$4 + 6 + 2$
$\boxed{12}$

$f(x) = 3x + 2$, find each value.

6.   $3[f(2)]$   1) Find f(2)  2) multiply by 3
$f(2) = 3(2) + 2$
$f(2) = 8$
$3(8) = \boxed{24}$

7.   $4[f(-1)]$
$f(-1) = 3(-1) + 2$
$f(-1) = -1$
$4(-1) = \boxed{-4}$

8.   $f(\heartsuit)$
$f(\heartsuit) = 3\heartsuit + 2$

9. Find the 5th term of the sequence, if the pattern rule is $f(x) = 3x - 1$.
$x = 5$
$f(5) = 3(5) - 1$
$f(5) = \boxed{14}$

10.   $f(x)$
Let the output equal -7; solve the following function $f(x) = -2x - 5$ to find the input.
$f(1) = -2(1) - 5$
$-7 = -2x - 5$
$+5 \qquad +5$
$-2 = -2x$
$\boxed{1 = x}$

**4**

Algebra I - Unit 3: Topic 1 - Evaluating Functions

**Practice - Evaluating Functions**                            **pp 245-251**

Name _____ Date _____ Period _____

**Find values for the following functions:**   *g(x) & h(x) are same*

| $f(x) = 3x + 7$ | $g(x) = x^2 - 1$ | $h(x) = 2(x - 5)$ |
|---|---|---|
| $f(3) =$ | $g(3) =$ | $h(3) =$ |
| $f(-2) =$ | $g(-2) =$ | $h(-2) =$ |
| $f(0) =$ | $g(0) =$ | $h(0) =$ |
| $4[f(1)] =$ | $-3[g(1)] =$ | $2[h(1)] =$ |

**Use the graph to the right to answer the following questions.**
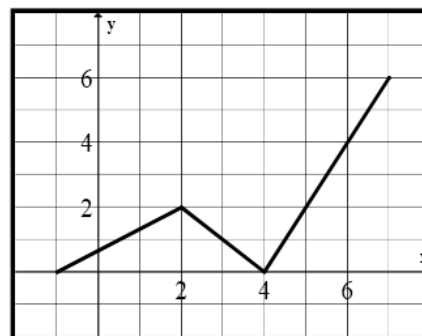
5. What is the value of *f(4)?*

6. What is the value of *f(6)?*

7. For what value or values of *x* does *f(x)* = 2?

8. For what value or values of *x* does *f(x)= 1?*

9. For what *x*-values is *f(x)* greater than or equal to 2?

10. What are the domain and range of the function shown on the graph?

Algebra I - Unit 3: Topic 1 - Evaluating Functions

11. A recreational vehicle gets 21 miles per gallon. The relationship of the miles that the car can go to gallons of gas is expressed by the function $f(x) = 21x$, where $x$ is the number of gallons of gasoline. Evaluate the function to determine the number of miles that the vehicle can travel on a full tank if the tank holds 14 gallons.

12. Find the $10^{th}$ term of the sequence that has the rule $A(n) = 32 + (n - 1)(-2)$.

13. What is the input when the output is 58, using the function $A(n) = -5 + (n - 1)(3)$?

14. If a function is defined by $f(x) = x^2 - 5$ and the domain is {2, 5, 8}, what are the dependent values?

15. If $f(x) = 3x^2 + 4x - 6$, then what is f(☺)?

16. The graph below shows the weight of Denise's dog Elmo over the 6-month period after she adopted him. Evaluate the function to determine the weight of Elmo, if Denise has had him for a period of four months.