Pre Calc Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 WS Assessment

Target 1

* Function Basics
* Working with Functions
* Function Domain and Range
* Equations of a Line
* Graphing Functions

HW 1 Linear Function [www.deltamath.com](http://www.deltamath.com)

Evaluation function

Given function $f\left(x\right)=x^{2}+\sqrt[3]{x}+e^{2x}$. Find *f* (2) *f* (2.05) $f(\frac{2}{3})$.

(Value, Table, Function, and Manual)

Now your turn: $f\left(x\right)=x^{3}+\sqrt[3]{x+2}+e^{2x-3}$

Show at least 4 different ways for stamp

Given $f\left(x\right)=x^{2}-3x$ rewrite the following as simplified polynomial

|  |  |  |
| --- | --- | --- |
| *f*(-x) | *f*(x) + 2 | *f*(x+2) |

Now you do: $f\left(x\right)=x^{2}+4x$

|  |  |  |
| --- | --- | --- |
| *f*(2x) | *f*(x) – 2x | *f*(1 – x) |

Given $f\left(x\right)=x^{2}-3x$ rewrite *f*(x + h) as simplified polynomial

Given $f\left(x\right)=x^{2}-3x$ express $\frac{f\left(x+h\right)-f(x)}{h}$ in simplest form

Now you do.

Given $f\left(x\right)=x^{2}+4x$ express $\frac{f\left(x+h\right)-f(x)}{h}$ in simplest form

Given $f\left(x\right)=4x-2$ express $\frac{f\left(x+h\right)-f(x)}{h}$ in simplest form

Find domain and range for the following function graph

|  |  |  |
| --- | --- | --- |
|  |  |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |

Find domain and range for the following function graph (desmos may help)

$f\left(x\right)=-3-\sqrt{-x-5}$ $f\left(x\right)=-1+\sqrt{25-x^{2}}$ $f\left(x\right)=-\left|4x+12\right|+8$

$f\left(x\right)=\frac{2x-3}{5x-15}$ $f\left(x\right)=\sqrt{x^{2}-4x-5}$ $f\left(x\right)=\frac{4x-1}{x^{2}-x-30}$

Graph this piecewise, state its domain and range show me for stamp. Sketch

$f\left(x\right)=\begin{matrix}x^{2}-5 , x<-1\\\sqrt{x} , 1<x<5 \\\frac{1}{x}+8 , 6<x<17\end{matrix}$

Distance between two points $d=\sqrt{(x\_{2}-x\_{1})^{2}+(y\_{2}-y\_{1})^{2}}$

Midpoint formula $x=\frac{x\_{1}+x\_{2}}{2},y=\frac{y\_{1}+y\_{2}}{2} $

Find the distance and midpoint of the segment between A(-4, -3) and B(1, 1)

Find the distance from the point P(-3, 5) to the midpoint of the line segment between A(5, -2) and B(1, 6)

Use the distance formula to find an equation of the perpendicular bisector of the line segment between the points (4, 3) and (-2, 5)

Find the coordinates of the points one-third and two-thirds of the way from a = 2 to b = 8 on a number line

Find the coordinates of the points one-third and two-thirds of the way from the point (1, 2) to the point (7, 11) in the coordinate plane.

Linear equations

The slope of a line through the points (x1, y1) and (x2, y2) is given by $m=\frac{y\_{2}-y\_{1}}{x\_{2}-x\_{1}}$

There are three forms that you need to master

1. Point-Slope Form: The line through the point (x1, y1) with slope m has equation

 y – y1 = m(x - x1)

2. Slope-Intercept Form: The line with slope m and y-intercept b has equation

y = mx + b.

3. Standard form

ax + by = c (where a > 0)

Two lines with slopes m1 and m2 are **parallel** iff m1 = m2 (iff = if and only if);

and **perpendicular** iff (m1)((m2) = -1

Write equation of the line which passes through the point (8, - 2) and has y-intercept 5.

in Point-Slope form, Slope-Intercept form and Standard form. Hint: Find slope first

Write equation of the line which passes through the point (2, -6) and is parallel to the line

4x – 3y = 24 in Point-Slope form, Slope-Intercept form and Standard form (ax + by = c)

Write an equation of the line which passes through the point (-4, 3) and is perpendicular to the line 2x – 5y = 20 in Point-Slope form, Slope-Intercept form and Standard form (ax + by = c)

Now you do. Given point P(\_\_\_\_, \_\_\_\_\_) you fill in. Write the equation of line L parallel to the line 2x – 5y = 10 and pass thru P in a form of your choice. Then write the equation of another line M perpendicular to 2x – 5y = 10 in a different form. Show me graph of three lines for stamp.

**Target 1 Assessment**

Given $f\left(x\right)=2x^{2}+2x$

1. Find $f(\sqrt{3})$
2. Write *f* (x + 2) – 2 in simplest polynomial form
3. Express $\frac{f\left(x+h\right)-f(x)}{h}$ in simplest form
4. Graph *f* (x+2) – 2 for the domain [-5, 5] show me for stamp. Sketch and state the domain and range

Given point A(2, 3) and B(7, 6).

1. Find midpoint M
2. Write the equation of the line perpendicular to AB and pass thru midpoint M
3. Find the point P on this perpendicular line such that PM = AB