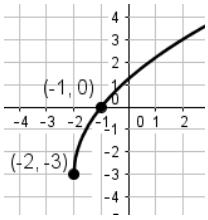
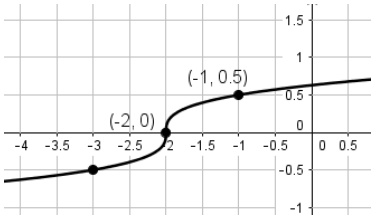
Name:

SPEED DATING: Parent Graphs & Transformations

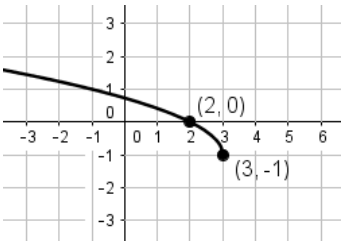
1A] Write the equation of the function.



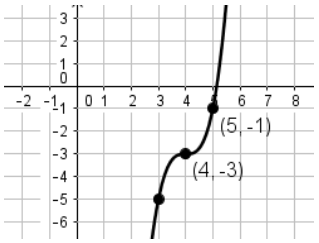
1B] Write the equation of the function.



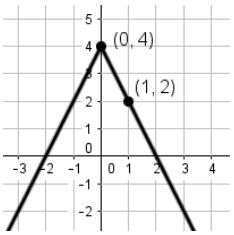
1C] Write the equation of the function.



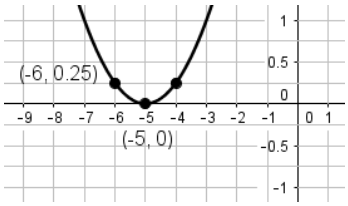
1D] Write the equation of the function.



1E] Write the equation of the function.

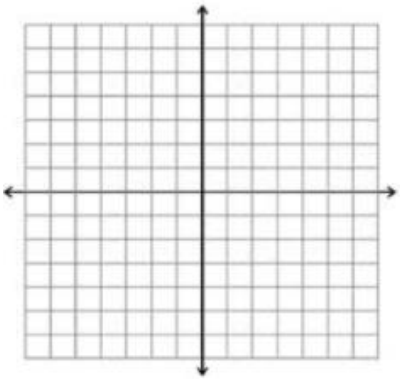


1F] Write the equation of the function.



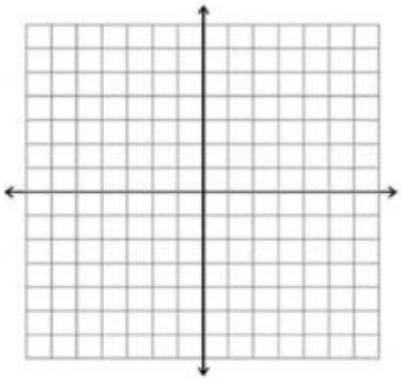
2A] Sketch an accurate graph WITHOUT a calculator.

$f(x) = -3\sqrt[3]{x+2} - 1$



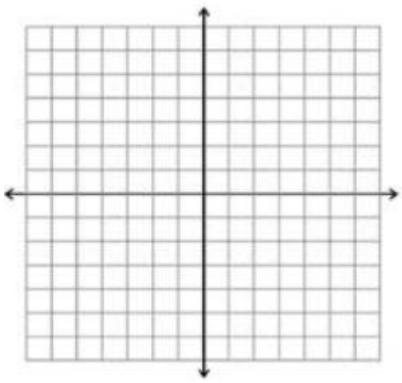
2B] Sketch an accurate graph WITHOUT a calculator.

$f(x) = \frac{2}{x-3} + 1$



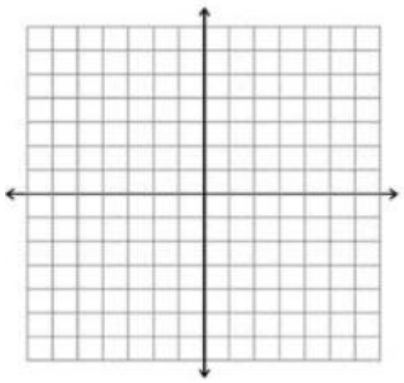
2C] Sketch an accurate graph WITHOUT a calculator.

$f(x) = -\frac{1}{2}|x-3| + 4$



2D] Sketch an accurate graph WITHOUT a calculator.

$f(x) = -\sqrt{-x+2} + 3$



3A] Write the equation of… ***A floor function with no non-rigid transformations that has been reflected in the y-axis, translated 7 units to the left, and translated down 10 units.***	3B] Write the equation of… ***A function with domain*** $(-\infty, \mathbf{2}) \cup (\mathbf{2}, \infty)$ ***and range of*** $(-\infty, \mathbf{-3}) \cup (\mathbf{-3}, \infty)$ ***that has been dilated by 4 and reflected in the x-axis.***
3C] Write the equation of… ***A radical function with domain*** $[\mathbf{-2}, \infty)$ ***and range*** $(-\infty, \mathbf{0}]$ ***and a vertical shrink of ¾.***	3D] Write the equation of… ***A radical with domain and range both*** $\mathbb{R}$ ***that is always decreasing from left to right, has no dilation, and is centered at (5,-9).***
3E] Write the equation of… ***A parabola with a horizontal shrink of 2 that opens downward, has a range of*** $(-\infty, \mathbf{12}]$ ***and its vertex on the y-axis.***	3F] Write the equation of… ***A function whose vertex forms an acute angle that opens upward with its vertex at (-3, -1) and a vertical stretch of 8.***
4A] If (2, 3) is a point on the graph of *f(x)*, find a point on the graph of $-f(x-2)-3$.	4B] If (-1, 3) is a point on the graph of *f(x)*, find a point on the graph of $3f(-x)+2$.
4C] If (-1, 0) is a point on the graph of *f(x)*, find a point on the graph of $f\left(\frac{1}{3}(x+1)\right)-2$.	4D] If (8, -10) is a point on the graph of *f(x)*, find a point on the graph of $\frac{1}{2}f\big(-(x-3)\big)$.

5A] Describe the transformations in *f(x)*.

$$f(x) = 2 - |3(x+4)| - 5$$

Standard Form:_____
Type of Function:_____

Rigid transformations	Non-rigid transformations

5B] Describe the transformations in *f(x)*.

$$f(x) = 1 + \frac{1}{3}\sqrt{5-x}$$

Standard Form:_____
Type of Function:_____

Rigid transformations	Non-rigid transformations

5C] Describe the transformations in *f(x)*.

$$f(x) = (2x-4)^2 + \frac{1}{6}$$

Standard Form:_____
Type of Function:_____

Rigid transformations	Non-rigid transformations

5D] Describe the transformations in *f(x)*.

$$f(x) = -2 + 3\lceil x - 2 + 3 \rceil$$

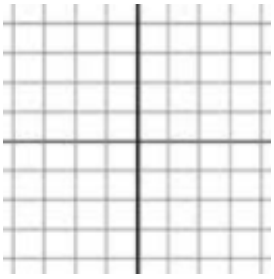
Standard Form:_____
Type of Function:_____

Rigid transformations	Non-rigid transformations

6A] Sketch both graphs and answer the questions beneath with "yes" or "no".

$$f(x) = -\sqrt{x} + 1$$

$$g(x) = -|x| + 1$$

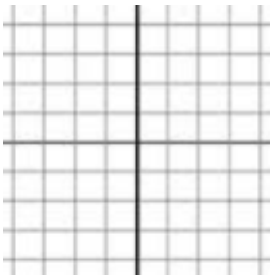


- Do f(x) and g(x) have the same domain? _____
- Do f(x) and g(x) have the same range? _____

6B] Sketch both graphs and answer the questions beneath with "yes" or "no".

$$f(x) = \sqrt{-x} + 2$$

$$g(x) = (-x)^2 + 2$$

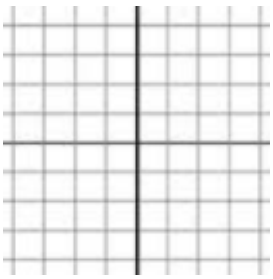


- Do f(x) and g(x) have the same domain? _____
- Do f(x) and g(x) have the same range? _____

6C] Sketch both graphs and answer the questions beneath with "yes" or "no".

$$f(x) = (x-2)^3$$

$$g(x) = (x-2)^2$$

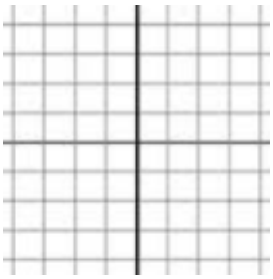


- Do f(x) and g(x) have the same domain? _____
- Do f(x) and g(x) have the same range? _____

6D] Sketch both graphs and answer the questions beneath with "yes" or "no".

$$f(x) = 3|x| - 2$$

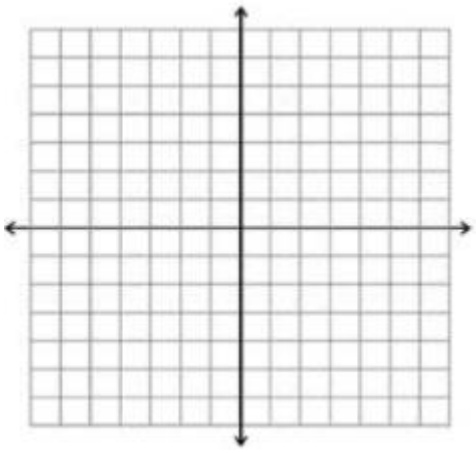
$$g(x) = 3x - 2$$



- Do f(x) and g(x) have the same domain? _____
- Do f(x) and g(x) have the same range? _____

7A] Sketch the **quadratic function** with the following transformations:
$-2 \cdot f(x+3)+5$

Use three anchor points from the parent graph to find the coordinates of three points on the transformed graph.

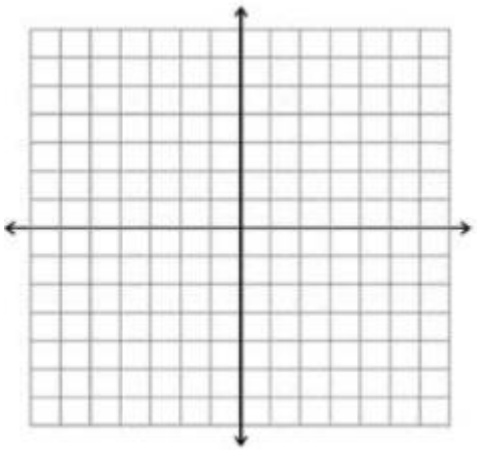


Find additional guide points as needed to get an accurate sketch.

Anchor Points	*a*	*b*	*h*	*k*

7B] Sketch the **cubic function** with the following transformations:
$-f\left(\frac{1}{2}x\right)+5$

Use three anchor points from the parent graph to find the coordinates of three points on the transformed graph.

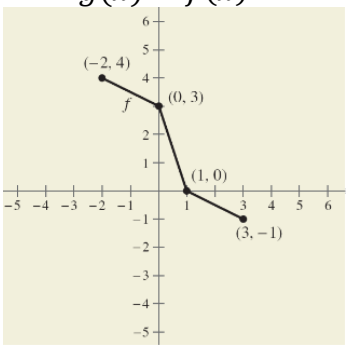


Find additional guide points as needed to get an accurate sketch.

Anchor Points	*a*	*b*	*h*	*k*

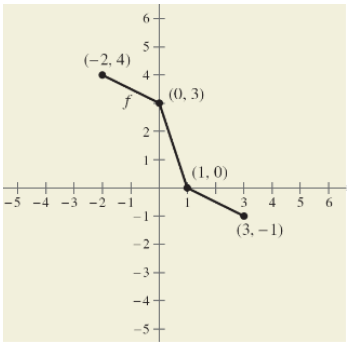
8A] *f(x)* is shown in the graph. Sketch *g(x)* in a different color and label the coordinates of the four corresponding points.

$g(x) = f(x) - 1$



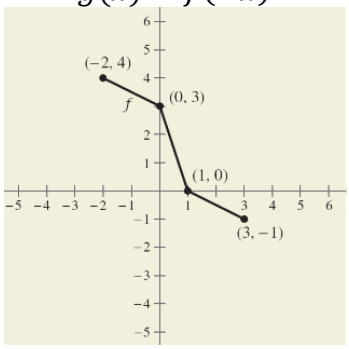
8B] *f(x)* is shown in the graph. Sketch *g(x)* in a different color and label the coordinates of the four corresponding points.

$g(x) = f(x-1)$



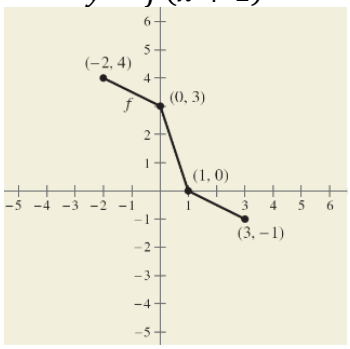
8C] *f(x)* is shown in the graph. Sketch *g(x)* in a different color and label the coordinates of the four corresponding points.

$g(x) = f(-x)$



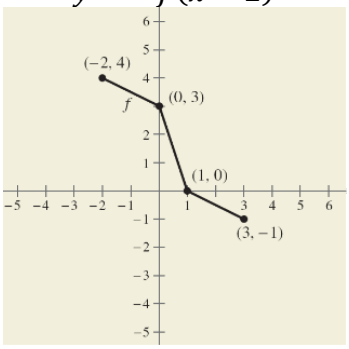
8D] *f(x)* is shown in the graph. Sketch *g(x)* in a different color and label the coordinates of the four corresponding points.

$y = f(x+1)$



8E] *f(x)* is shown in the graph. Sketch *g(x)* in a different color and label the coordinates of the four corresponding points.

$y = -f(x-2)$



8F] *f(x)* is shown in the graph. Sketch *g(x)* in a different color and label the coordinates of the four corresponding points.

$y = \frac{1}{2}f(x)$