Functions & Transformations Maze

Name _____ Period _____

Start in the top-left room. Solve each problem. Go through the door that shows your answer. Show your work on the answer grid.

START

Let $f(x) = 3x^2 - 4x + 1$.
Find $f(-2)$.

21

$x > 3$

State the domain.
$f(x) = \sqrt{(2x - 6)}$

$x \geq 6$

$f(x) = x^2 - 3x$
and $g(x) = 2x + 1$.
Find $(f \circ g)(3)$.

8

$f(x) = \begin{cases} x^2 - 1, & x < 2 \\ 3x - 5, & x \geq 2 \end{cases}$
Find $f(-3) + f(2)$.

$(-\infty, -1) \cup (-1, \infty)$

$x \geq 3$

$(2, -3)$

$3x + 4$

$3x - 4$

9

State the domain in interval notation.
$f(x) = \dfrac{x + 1}{x - 3}$

$(-\infty, 3]$

The point $(4, -3)$ is on $y = f(x)$.
Find its image on $y = -f(x + 2)$.

$3x^3 - 2x^2 + 3x - 2$

Find the inverse.
$f(x) = \dfrac{x + 4}{3}$

$(3, \infty)$

Find $(f \circ g)(2)$.

x	1	2	3
$f(x)$	3	1	4
$g(x)$	2	3	1

$|x + 3| + 2$

$(6, -3)$

$(2, 3)$

$9x^2 - 12x + 5$

-13

4

3

Write the equation of $y = |x|$ after it shifts left 3 and down 2.

$9x^2 + 5$

$f(x) = 3x - 2$
and $g(x) = x^2 + 1$.
Find $(g \circ f)(x)$.

$x \leq 3$

Find the inverse, with its domain.
$f(x) = \sqrt{(x - 2)} + 1$

$(x - 1)^2 - 2, x \geq 1$

State the range.
$f(x) = -2(x - 1)^2 + 5$

$|x - 3| - 2$

$3x^2 + 1$

2

$(x - 1)^2 + 2, x \geq 1$

5

$3\sqrt{(4 - x)}$

$y \leq -5$

The point $(6, -4)$ is on $y = f(x)$.
Find its image on $y = 3f(2x) - 1$.

$64

A $80 jacket: first a $15 coupon, then 20% off the reduced price.
What is the final price?

$52

Write the equation of $y = \sqrt{x}$ after a vertical stretch by 3, a reflection in the x-axis, and a shift right 4.

$-3\sqrt{(x - 4)}$

FINISH

You made it!

Functions Maze: Answer Grid

Name _____ Period _____

Write each answer in the order you found it, and show your work for that room.

1	Answer: _____	Work:
2	Answer: _____	Work:
3	Answer: _____	Work:
4	Answer: _____	Work:
5	Answer: _____	Work:
6	Answer: _____	Work:
7	Answer: _____	Work:
8	Answer: _____	Work:
9	Answer: _____	Work:
10	Answer: _____	Work: