Math-1010 Name_____ ID: 1

Math-1010 Final Exam Review #2

Date_____ Period____

Identify the domain and range of each.

1) $y = \log_5 (2x - 1) - 2$

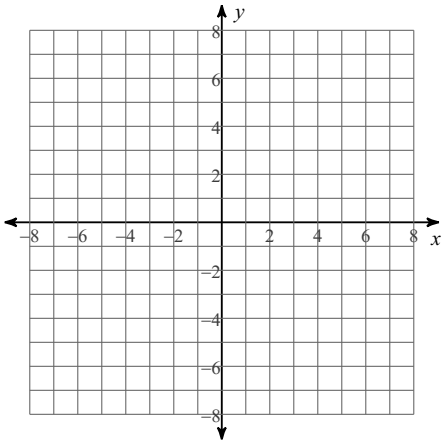
2) $y = \log_2 (4x + 10)$

Evaluate each expression.

3) $\log_6 \frac{1}{36}$

Sketch the graph of each function.

4) $y = \log (x - 2) + 2$



Rewrite each equation in exponential form.

5) $\log_{14} \frac{1}{196} = -2$

Rewrite each equation in logarithmic form.

6) $\left(\frac{1}{7}\right)^3 = \frac{1}{343}$

Find the inverse of each function.

7) $y = \log_6 (x + 1)$

8) $y = 3 \cdot 2^x + 4$

9) $y = 2 \cdot \left(\frac{1}{3}\right)^x - 1$

Perform the indicated operation.

10) $h(t) = t^3 + 4t$
$g(t) = 3t - 2$
Find $(h \cdot g)(t)$

11) $g(n) = 3n - 1$
$f(n) = 4n + 3$
Find $(g \circ f)(n)$

12) $f(x) = x^3 + 5$
$g(x) = 3x + 1$
Find $(3f + 5g)(x)$

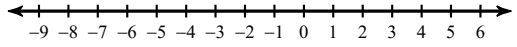
13) $g(x) = -2x + 4$
$h(x) = x^2 - 2$
Find $(g \cdot h)(-3)$

14) $h(a) = a^2 - 2$
$g(a) = 2a + 4$
Find $(-3h + 5g)(-2)$

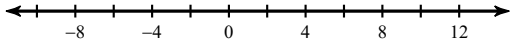
15) $h(n) = 2n^2 + 2 + 2n$
$g(n) = n + 3$
Find $(h \circ g)(-6)$

Simplify the inequality then graph its solution.

16) $n - 8 \geq -14$ and $5n < 25$



17) $x - 4 > 6$ or $-5x \geq 30$



Solve each equation by completing the square.

18) $0 = x^2 - 6x - 38$

19) $0 = x^2 + 14x + 1$

Solve each equation by factoring.

20) $2m^2 + 3m = 0$

21) $3k^2 - 14k + 15 = 0$

Solve each equation by taking square roots.

22) $3k^2 + 6 = 102$

23) $16n^2 - 3 = 97$

24) For the following data: (0,3), (1, 3.6), (2, 4.32), (3, 5.184)

a) What is the equation that fits the data?

b) What is the growth factor?

c) What is the percent rate of change?

25) For the following data: (0,5), (1, 4.25), (2, 3.1625)

a) What is the equation that fits the data?

b) What is the growth factor?

c) What is the percent rate of change?

26) A basketball is thrown upward from the top of a 75 foot building. The equation that models the position of the ball (height above ground level in feet) and the ball's horizontal distance traveled (x feet) is: $h \cdot x = -0.5x^2 + 4x + 75$

How far away from the build must a basketball hoop be place so that the ball, when thrown will pass through the basket. The height of the basketball hoop is 10 feet above the ground.