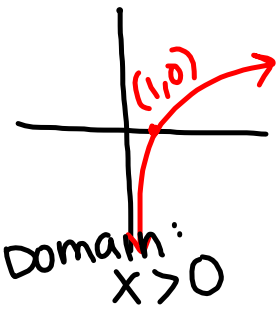
SM3H - Tuesday

Officially, your Units 1-3 Review is due today; however, we can take today to go over questions and you can turn it in next class before you take the final.

*Make sure your Modules 6 & 7 Homework is finished. I will come around and check it one more time today.

*We are working on our Final Study Guide today, so get that out.

17, 18, 23, 24



(17) $\log 9 - \log(x-4) = \log 7$

$x-4>0$
$x>4$

$\log\left(\frac{9}{x-4}\right) = \log 7$

$10^{\log\left(\frac{9}{x-4}\right)} = 10^{\log 7}$

$\frac{9}{x-4} = 7$

$9 = 7(x-4)$

$9 = 7x - 28$

$+28 \quad +28$

$\frac{37}{7} = \frac{7x}{7}$

$\frac{37}{7} = x$

$3x^2 > 0$
$x > 0$

(18) $\log_9(3x^2) - \log_9 3 = 1$

$\log_9\left(\frac{3x^2}{3}\right) = 1$

$\log_9(x^2) = 1$

$9^{\log_9(x^2)} = 9^1$

$9^1 = x^2$

$\sqrt{9} = \sqrt{x^2}$

$x = \pm 3$ or $x = 3$ OK

(23) $x^8 - 32x^4 + 256 = 0$

$(x^4 - 16)(x^4 - 16) = 0$

$(x^2-4)(x^2+4)(x^2-4)(x^2+4) = 0$

$(x-2)(x+2)(x^2+4)(x-2)(x+2)(x^2+4) = 0$

$(x-2)^2(x+2)^2(x^2+4)^2 = 0$

(24) $x^6 - 64 = 0$

$(x^3 - 8)(x^3 + 8) = 0$

$(x-2)(x^2+2x+4)(x+2)(x^2-2x+4) = 0$

(5) $\frac{x}{10} = \frac{10\log_y 4}{10}$

$\frac{x}{10} = \log_y 4$

$y^{\frac{x}{10}} = 4$

(6) $x = \log_4 y + 9$

$-9 \quad -9$

$(x-9) = \log_4 y$

$4^{x-9} = y$

$f^{-1}(x) = 4^{x-9}$