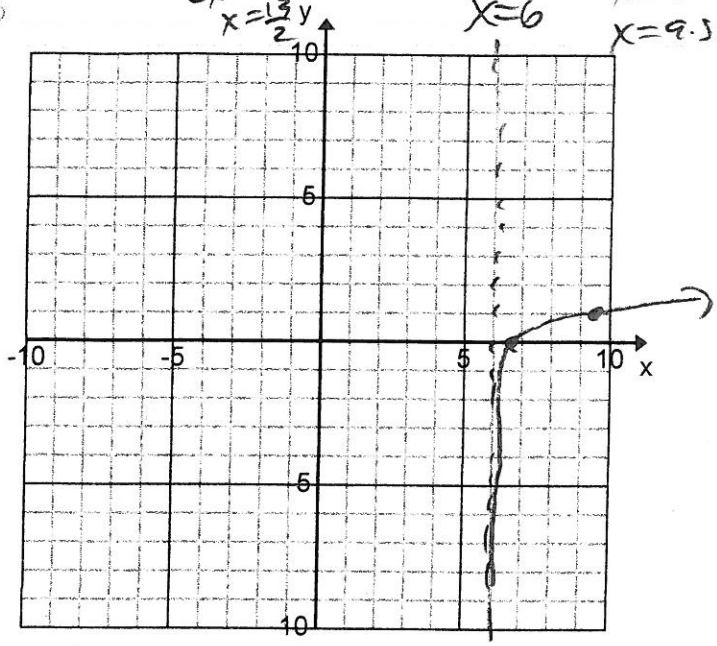
Name_____Sample of LAST QUIZ 3 before Break Period ____

YOU WILL NOT BE GIVEN A GRAPHING CALCULATOR for this quiz

$2x-12=0$ $x=6$ | $2x-12=1$ $2x=13$ $x=\frac{13}{2}$ | $2x-12=7$ $2x=19$ $x=9.5$ | $2x-12=44$ $2x=61$ $x=30.5$

$f(x) = \log_7(2x - 12)$



State the domain of this function as an inequality

$x>6$

State the x intercept of this function

$(6.5, 0)$

State the vertical asymptote of this function

$x=6$

State any two rational coordinates that lie on the graph of this function

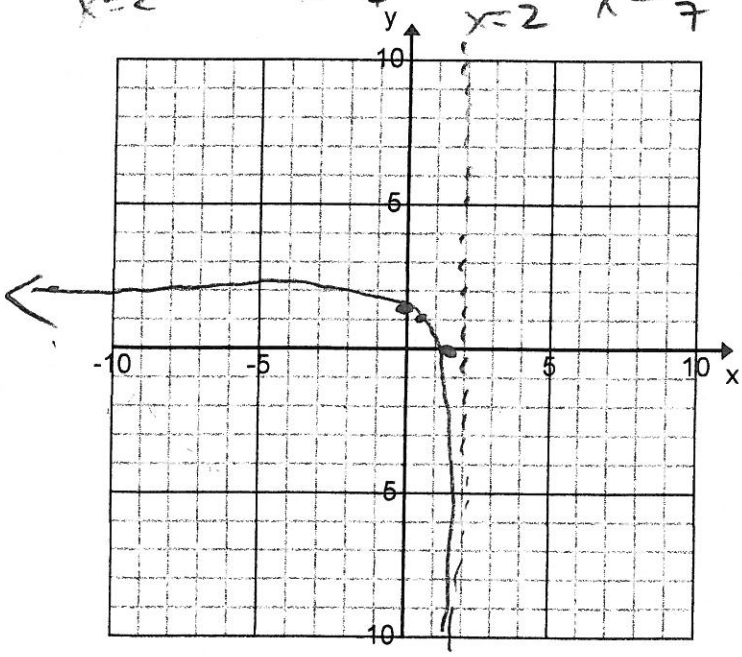
$(9.5, 1)$

Sketch a graph of this function on the provided axis

$(30.5, 2)$

$14-7x=0$ $-7x=-14$ $x=2$ | $14-7x=1$ $-7x=-13$ $x=\frac{13}{7}$ | $14-7x=10$ $-7x=-4$ $x=\frac{4}{7}$ | $14-7x=100$ $-14 \quad -14$ $-7x=86$

$f(x) = \log\ (14 - 7x)$



State the domain of this function as an inequality

$x<2$

State the x intercept of this function

$(\frac{13}{7}, 0)$ $(1.857, 0)$

State the vertical asymptote of this function

$x=2$

State any two rational coordinates that lie on the graph of this function

$(\frac{4}{7}, 1) = (0.571, 1)$

Sketch a graph of this function on the provided axis

$(\frac{-86}{7}, 2)$

$(-12.286, 2)$

$(0, \log 14)$

$(0, 1.14)$

$x^2-16=0$

$x^2=16 \quad x=\pm 4$

$x^2-16=1$

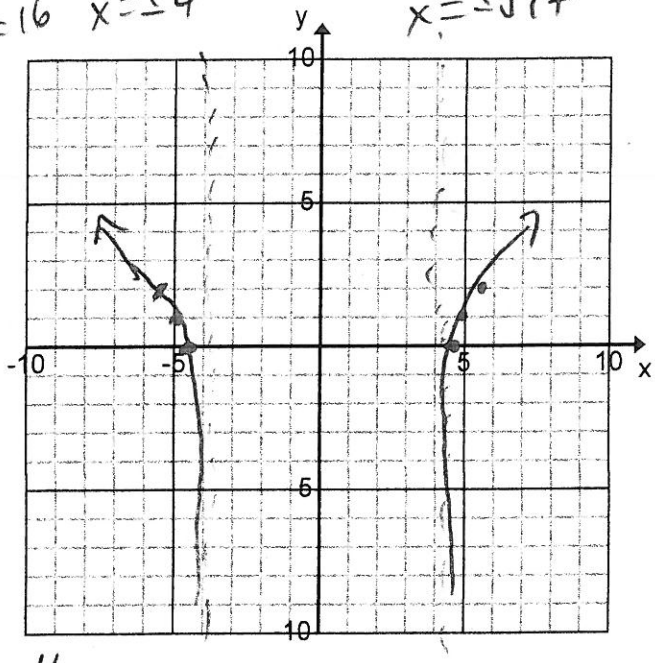
$x^2=17$

$x=\pm\sqrt{17}$

$x^2-16=4$

$x^2=20$

$x=\pm\sqrt{20}$



$f(x) = \log_4(x^2 - 16)$

State the domain of this function as an inequality

$x < -4$ or $x > 4$

State the x intercept of this function

$(\pm\sqrt{17}, 0) = (\pm 4.12, 0)$

State the vertical asymptote of this function

$x = -4 \quad x = 4$

State any two rational coordinates that lie on the graph of this function

$x = \pm$ $(\pm\sqrt{17}, 1)$ $(\approx \pm 4.47, 1)$

Sketch a graph of this function on the provided axis

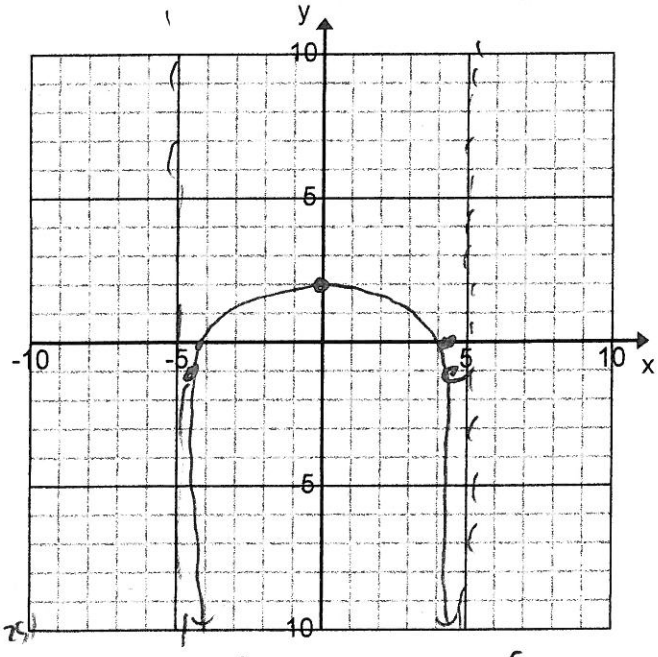
$(\pm\sqrt{32}, 2)$

$(\pm 5.66, 2)$

$x^2-16=16$

$x^2=32$

$25-x^2=0$



$f(x) = \log_5(25 - x^2)$

State the domain of this function as an inequality

$-5 < x < 5$

State the x intercept of this function

$(\pm\sqrt{24}, 0) \quad (\pm 4.90, 0)$

State the vertical asymptote of this function

$x = -5 \quad x = 5$

State any two rational coordinates that lie on the graph of this function

$(\pm\sqrt{20}, 1)$ $(\pm 4.47, 1)$

Sketch a graph of this function on the provided axis

$(0, \log_5 25)$

$(0, 2) \quad x = -5 \quad x = 5$

$25-x^2=1$

$-25 \quad -25$

$-x^2=-24$

$x^2=24$

$x=\pm\sqrt{24}$

$25-x^2=5$

$-25 \quad -25$

$\frac{-x^2}{-1}=\frac{-20}{-1}$

$x^2=20$

$25-x^2=\frac{1}{5}$ $(\pm 4.98, -1)$

$125-5x^2=1$

$-5x^2=-124$

$x^2=\frac{-124}{-5}$

$x=\sqrt{\frac{124}{5}}$

Determine each of the solutions of these equations AS IF YOU ONLY had LOG and LN buttons on your calculators NO LOG base b button exists!

1. $80\boxed{(3)^{2x-6}} + 13 = 256$

$-13 \quad -13$

$\frac{80(3^{2x-6})}{80} = \frac{243}{80}$

$(3^{2x-6}) = \frac{243}{80}$

$\cancel{\log_3} 3^{2x-6} = \log_3\left(\frac{243}{80}\right)$

$2x-6 = \boxed{\log_3\left(\frac{243}{80}\right)}$

$+6 \quad +6$

$\frac{2x}{2} = \frac{6 + \log_3\left(\frac{243}{80}\right)}{2}$

$x = \frac{6+\log_3\left(\frac{243}{80}\right)}{2}$

Exact answer _____ approximate answer if necessary 3.106

2. $25\boxed{\ln(5x-10)} - 50 = 150$

$+50 \quad +50$

$\frac{25(\ln 5x-10)}{25} = \frac{200}{25}$

$\cancel{e}^{\ln(5x-10)} = e^8$

$5x-10 = \boxed{e^8}$

$\frac{5x}{5} = \frac{10+e^8}{5}$

$x = \frac{10+e^8}{5}$

$\frac{10+e^8}{5}$

Exact answer _____ approximate answer if necessary 598,192

3. $9\boxed{(e)^{2x-6}} - 4 = 32$

$\frac{9e^{2x-6}}{9} = \frac{36}{9}$

$e^{2x-6} = 4$

$\cancel{\ln e}^{2x-6} = \ln 4$

$2x-6 = \boxed{\ln 4}$

$+6 \quad +6$

$\frac{2x}{2} = \frac{6+\ln 4}{2}$

$\frac{6+\ln 4}{2}$

Exact answer _____ approximate answer if necessary 3.693

Determine each of the solutions of these equations AS IF YOU ONLY had LOG and LN buttons on your calculators NO LOG base b button exists! (if no answer exist explain WHY NOT!)

1. $-4\log(12x+16)+24=44$

$-24 \quad -24$

$-4\log(12x+16)=20$

$\frac{-4\log(12x+16)}{-4}=\frac{20}{-4}$

$\log(12x+16)=-5$

$\cancel{\log}(12x+16)=-5$

$10 \qquad 10$

$12x+16=10^{-5}$

$12x+16-16=-16+10^{-5}$

$12x=-16+10^{-5}$

$\frac{12x}{12}=\frac{-16+10^{-5}}{12}$

Exact answer $\frac{-16+10^{-5}}{12}$ approximate answer if necessary -1.333332

2. $10(5)^{15x-20}+100=10$

$-100 \quad -100$

$10(5)^{15x-20}=-90$

$\frac{10(5)^{15x-20}}{10}=\frac{-90}{10}$

$5^{15x-20}=-9$

not possible

$\log_5(-9)\neq 15x-20$

Exact answer no solution approximate answer if necessary _____

3. $4(e)^{3x-6}-16=-24$

$+16 \quad +16$

$4e^{3x-6}=-8$

$\frac{4e^{3x-6}}{4}=\frac{-8}{4}$

$e^{3x-6}=-2$

not possible

$e^{3x+6}\neq -2$

$\ln(-2)\neq 3x+6$

Exact answer no solutions approximate answer if necessary _____