

Daily Warm-Up

After Trig, Rational, and Piecewise Graphs

1. Simplify: $\log_3 \left(\frac{\sqrt[4]{27}}{3} \right)$

Solve

2. $7^{x-1} = e$

3. $2\cos x + 1 = 0$

Graph and fill in the necessary information.

4. $y = \frac{3x + 1}{x - 2}$

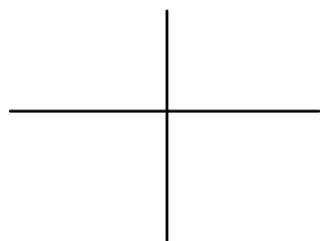
V.A.:

E.B.A.:

x-int:

y-int:

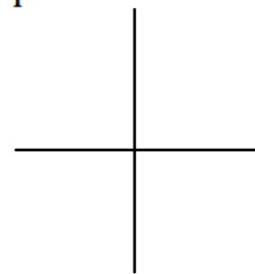
Domain:



5. $f(x) = \begin{cases} x & x^2 > 4 \\ \frac{1}{x} & x^2 < 4 \end{cases}$

D:

R:



Daily Warm-Up

After Trig, Rational, and Piecewise Graphs

1. Simplify: $\log_3 \left(\frac{\sqrt[4]{27}}{3} \right) = \log_3 \frac{3^{3/4}}{3^1} = \log_3 3^{-1/4} = -\frac{1}{4} \log_3 3 = \left(-\frac{1}{4} \right)$

Solve

2. $7^{x-1} = e$

$(x-1) \ln 7 = 1$

$x \ln 7 - \ln 7 = 1$

$x \ln 7 = \frac{1 + \ln 7}{\ln 7}$

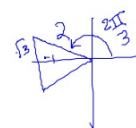
$x = \frac{1 + \ln 7}{\ln 7}$

3. $2 \cos x + 1 = 0$

$2 \cos x = -1$

$\cos x = -\frac{1}{2}$

$x = \frac{2\pi}{3}, \frac{4\pi}{3}$



Graph and fill in the necessary information.

4. $y = \frac{3x+1}{x-2}$

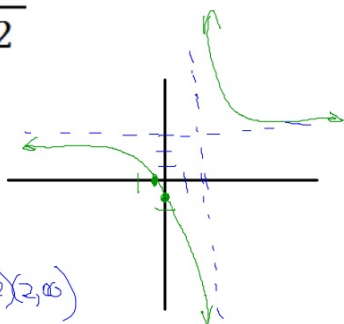
V.A.: $x=2$

E.B.A.: $y=3$

x-int: $(\frac{1}{3}, 0)$

y-int: $(0, \frac{1}{2})$

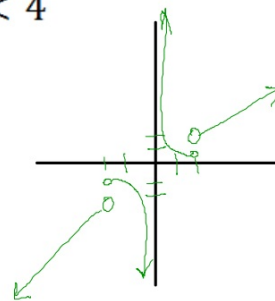
Domain: $(-\infty, 2) \cup (2, \infty)$



5. $f(x) = \begin{cases} x & x^2 > 4 \\ \frac{1}{x} & x^2 < 4 \end{cases}$

D:

R:



Note: On pages 28 and 54 there are AP style multiple choice questions that may be helpful in studying for the next test

Another way to simplify problem #1:

$$\log_3\left(\frac{\sqrt[4]{27}}{3}\right) = x$$

$$3^x = \frac{\sqrt[4]{27}}{3}$$

$$3^x = \frac{3^{3/4}}{3^1}$$

$$3^x = 3^{-1/4}$$

$$x = -\frac{1}{4}$$