

Use the solutions to check your HW if you did it

then →

let me know if you have questions

😊

then ↘

The next test is
Wed. Feb. 20

Then do the Warm Up.

ator

① $\frac{3}{50} \cdot \frac{700}{6} =$

② $\frac{3}{50} \cdot \frac{27}{20} =$

③ $\frac{-9n^3}{6n} =$

$$(4) \quad \frac{n^4 + n}{n} =$$

$$(5) \quad \frac{4x - 10}{6x} =$$

$$(6) \quad \frac{9(n+1)^2}{15(n+1)} =$$

with your calculator

$$\text{divide } \frac{52}{0} =$$

which means if you are working with an expression like $\frac{2x+15}{x}$ and $x=0$, you've got a problem.

Wait for instructions

simplify and state any restrictions on the variables of the function

$$f(x) = \frac{x-2}{x-2} \rightarrow \text{but } \dots$$

$$g(x) = \frac{x}{x} \cdot \frac{x}{x} \cdot \frac{x}{3} \rightarrow$$

$$h(n) = \frac{n^2-16}{n+4} \rightarrow$$



$$k(n) = \frac{n+2}{n-7} \cdot \frac{n+5}{n+2} \rightarrow \frac{n+5}{n-7} \text{ but } n \neq 7, n \neq 2$$

$$m(x) = \frac{9}{x} \cdot \frac{x}{9} \rightarrow \frac{9x}{9x} = 1 \text{ but } x \neq 0$$

$$f(m) = \frac{2m+6}{(m+3)(m-11)} \rightarrow \frac{2(m+3)}{(m+3)(m-11)} \rightarrow \frac{2}{m-11} \text{ but } m \neq -3, m \neq 11$$



$$g(x) = \frac{12(x+1)}{8(x+1)^2} \rightarrow \frac{3 \cdot \cancel{4} \cdot \cancel{(x+1)}}{2 \cdot \cancel{4} \cdot \cancel{(x+1)} \cdot (x+1)} \rightarrow \frac{3}{2(x+1)} \text{ but } x \neq -1$$

$$h(x) = \frac{3-2x}{(4x-1)(3-2x)} \rightarrow \frac{1}{4x-1} \quad x \neq \frac{1}{4} \quad x \neq 1.5$$

$$4x-1=0 \quad 3-2x=0$$

$$4x=1 \quad 3=2x$$

$$x=\frac{1}{4} \quad x=\frac{3}{2}$$

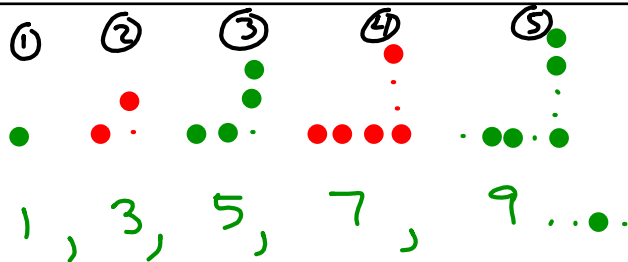
HW
Questions

67f $(m^2)^{\frac{-3}{2}}$

$$(a^2)^3 =$$

$$(a^n)^m =$$

63



$$t(n) = 1 + 2(n-1) \quad \leftarrow n^{\text{th}} \text{ term}$$

$$t(46) = 1 + 2(46-1) = 91 \quad \leftarrow 46^{\text{th}} \text{ term}$$

64 First piece of metal $T_1 = 20 + 2x$
 Second piece of metal $T_2 = 240 - 3x$ $x = \#$
 minutes

Equal
Values
method

$$20 + 2x = 240 - 3x$$

65 starting value \$10.25 + 3%

think $y = ab^x$

$$y = 10.25(1.03)^x$$

(a)

$$\begin{array}{c} \downarrow \\ 100\% + 3\% = 103\% \\ \downarrow \\ 1.03 \end{array}$$

(b) function $f(n) = 10.25(1.03)^n$

(c) $f(10) = 10.25(1.03)^{10} =$

$$\boxed{67} \quad a \quad \sqrt[5]{x}$$

$$b \quad \frac{1}{x^3}$$

$$c \quad x^{2/3}$$

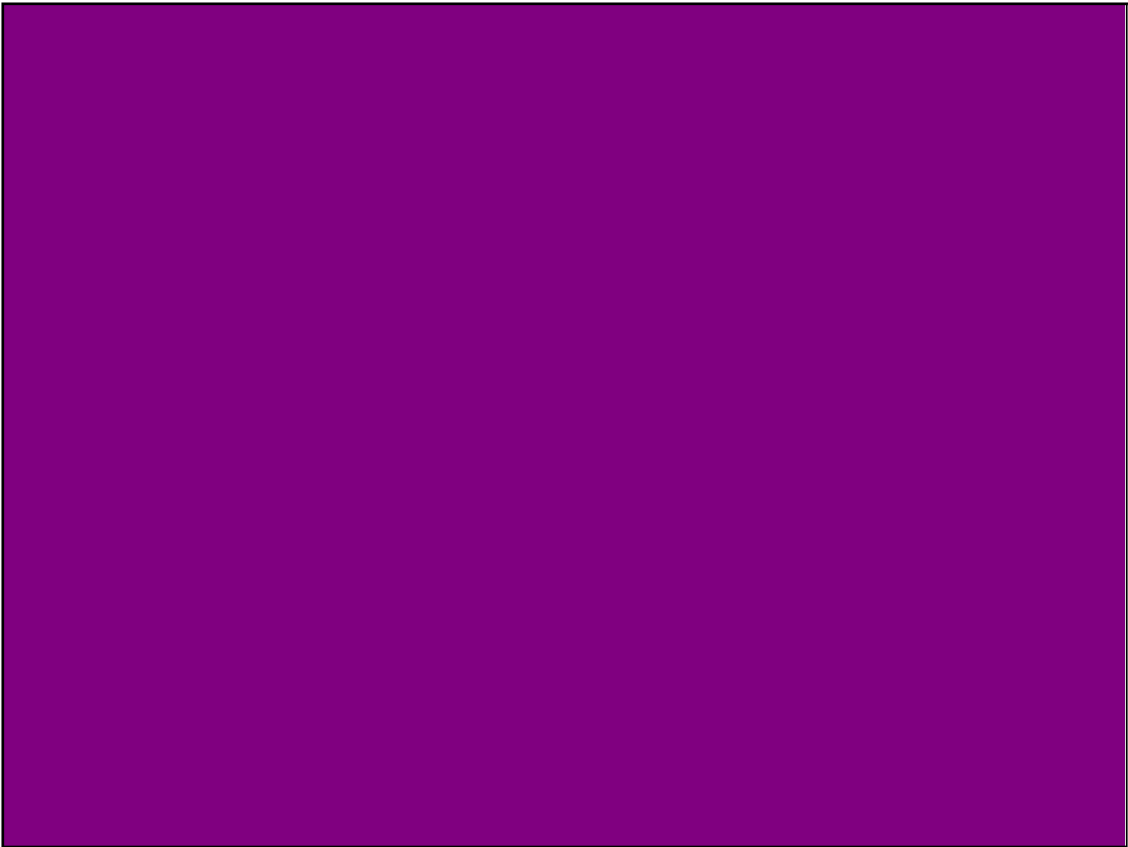
$$d \quad \frac{1}{\sqrt{x}} = \frac{1}{x^{1/2}}$$

$$e. \quad x^{-1}y^{-8}$$

$$f. \quad (m^2)^{-3/2}$$

$$g. \quad (x^3y^6)^{1/2} = \sqrt{x^3y^6}$$

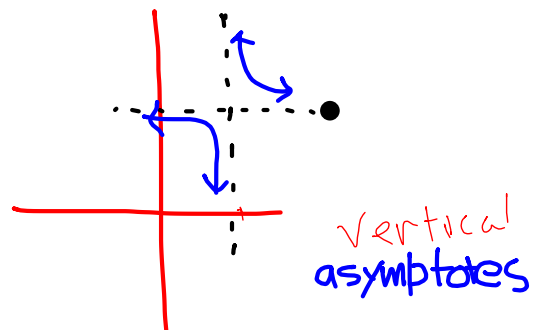
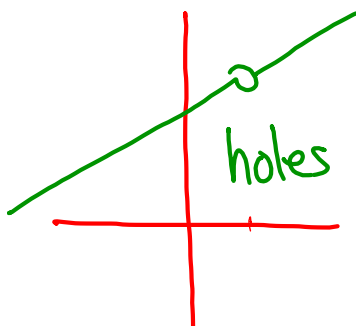
$$h. (9x^3y^6)^{-2}$$



Rational Functions

1. Analyze their graphs
2. Simplify them.
 - Easier
 - Harder

Rational functions create graphs that have
2 types of vertical discontinuities

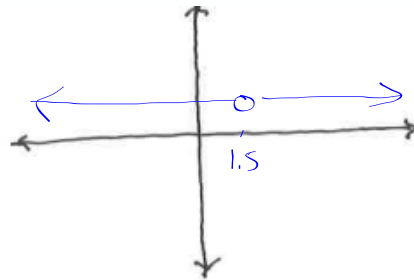


Analyzing Graphs of Rational Functions

1. Sketch each function - Use dashed lines for any asymptotes
- include any holes
2. Describe any discontinuities

$$g(x) = \frac{2x-3}{2x-3}$$

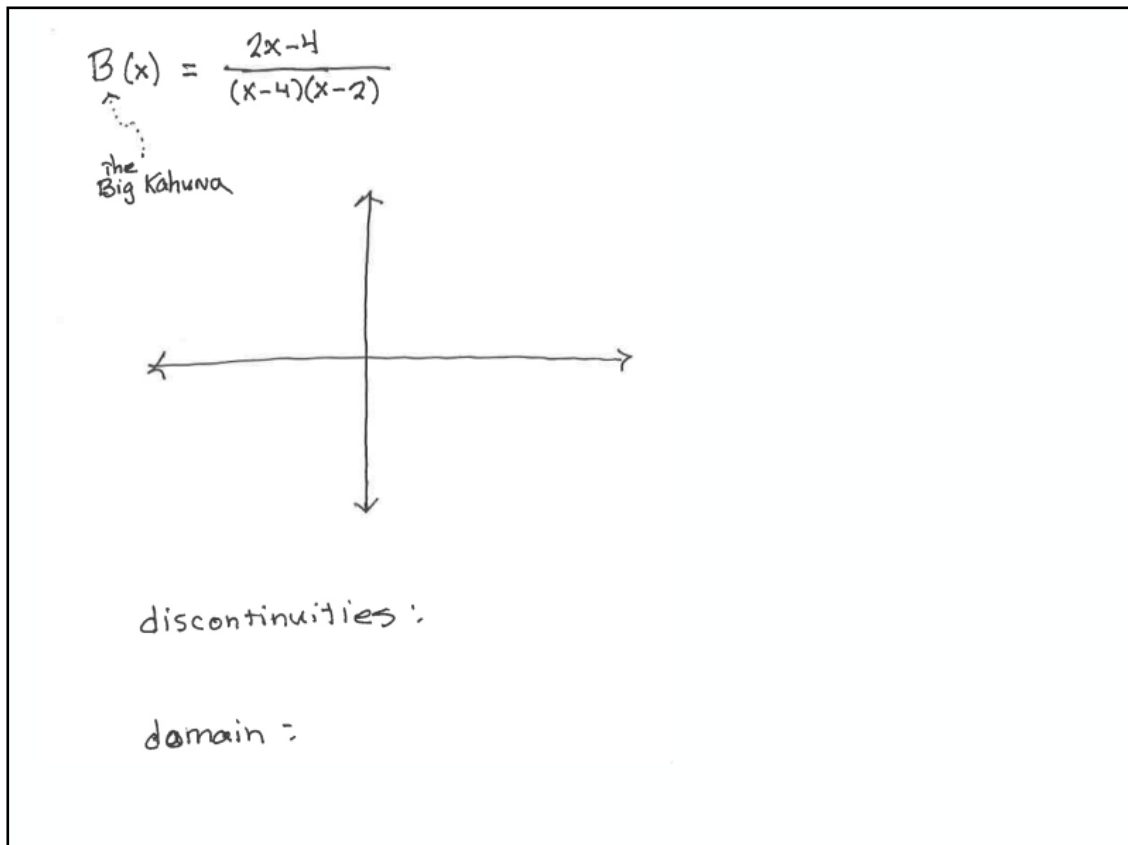
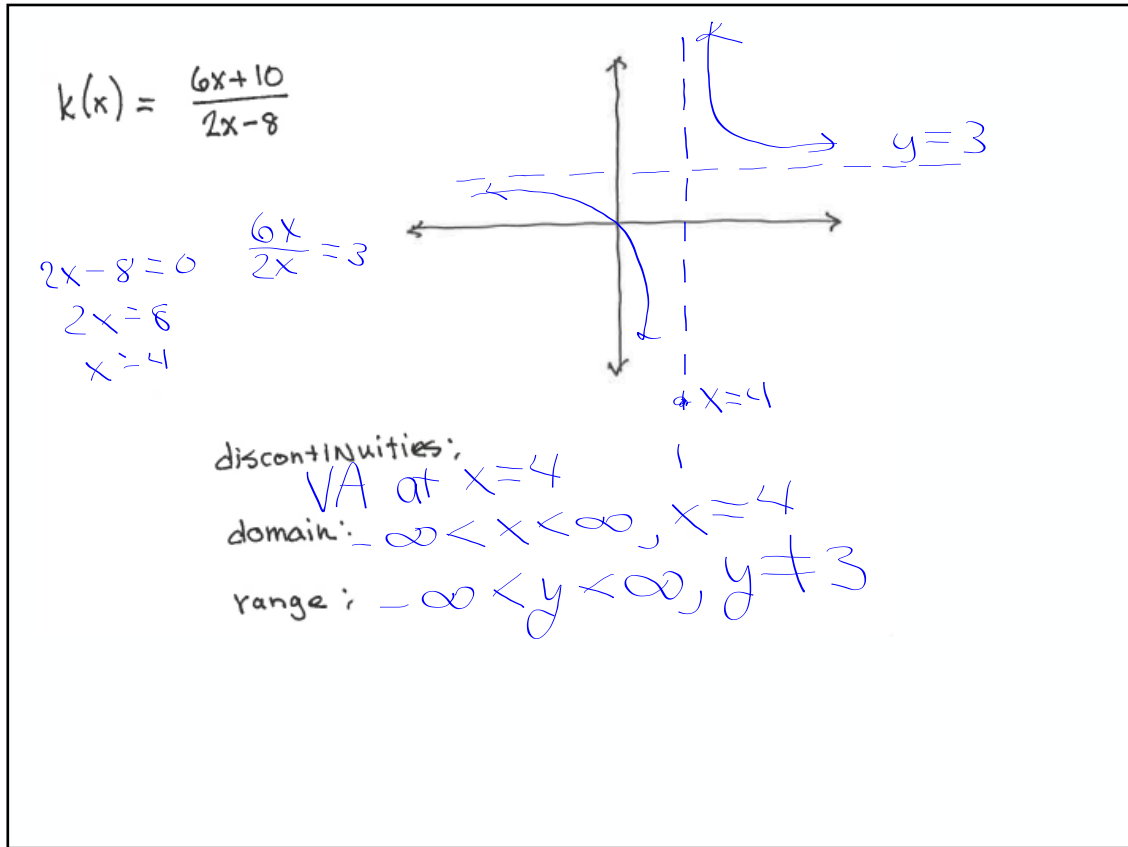
Always think
before you pick
up GDC!



$$\begin{aligned} 2x-3 &= 0 \\ 2x &= 3 \\ x &= \frac{3}{2} = 1.5 \end{aligned}$$

discontinuities:

hole at $x=1.5$
domain: $-\infty < x < \infty, x \neq 1.5$
range: $y=1$



NOTES examples of

Simplifying Rational expressions

- next level

ex.
A

$$\frac{x^2 + 6x + 9}{x^2 - 9}$$

ex B

$$\frac{x^2 + 4x}{2x + 8}$$

ex C

$$\frac{2x^2 - x - 10}{3x^2 + 7x + 2}$$

$$c. \frac{28x^2 - x - 15}{28x^2 - x - 15}$$

Assignment

3 - 78 to 84

😊 Keep up your hard work.



Next TEST

Wed. Feb. 20