Ways to study for test:

- "I can" statements
- Review packet (answers online)
- Review quiz
- Pg 86 #3-10, 13-19
- Online resources
  > ~~"Ace the Test"~~ Practice Quiz
  > Sections:
    - P1
    - 1.2-1.6

Given: $f(x) = x^2 - x + 1$

simplify: $\dfrac{f(h-3) - f(3)}{h}$

$(9 - 3 + 1)$

$$\frac{(h-3)^2 - (h-3) + 1 - 9 + 3 - 1}{h}$$

$$\frac{\cancel{h^2} - \cancel{6h} + \cancel{9} - h + 3 + 1 \cancel{-9} + 3 - 1}{h}$$

$$\frac{h^2 - 7h}{h} + 6$$

Does the equation represent y as a function of x?

$19x^2 + y^2 = 2$

a. No, y is not a function of x.

b. Yes

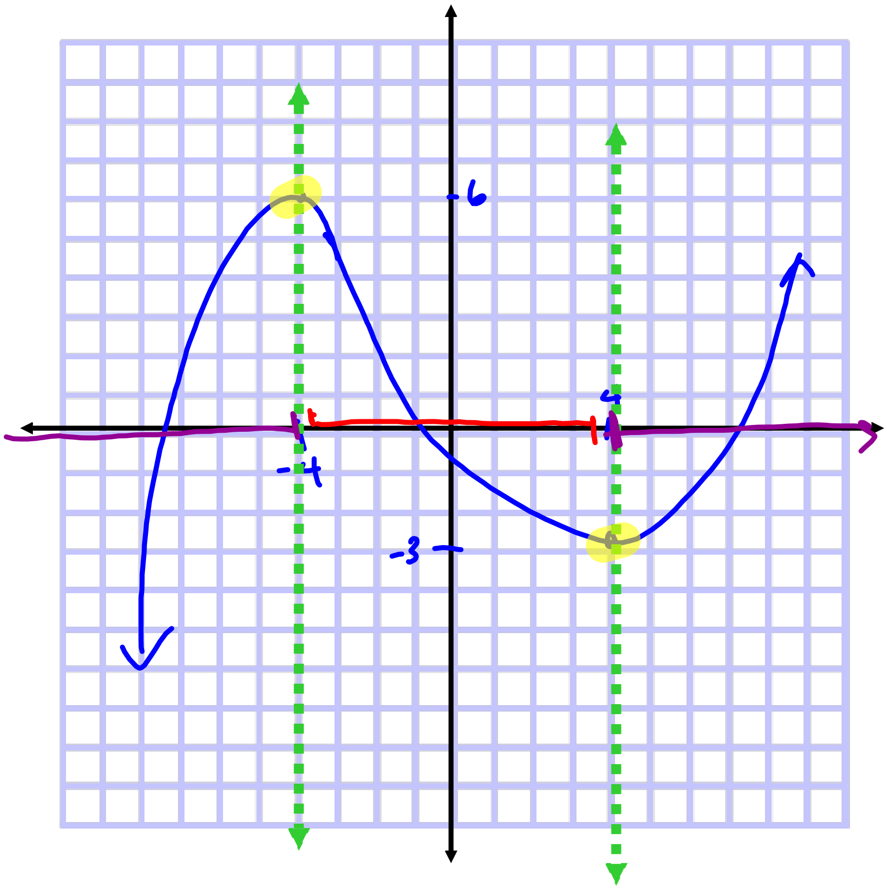
$$y^2 = -19x^2 + 2$$

$$y = \pm\sqrt{-19x^2+2}$$

Evaluate the function when $x = 0$.

$$f(x) = \begin{cases} x^2 + 2, & x < 0 \\ x - 2, & x \geq 0 \end{cases}$$

Your Answer: -2



Inc

$(-\infty, -4)$

$(4, \infty)$

Dec

$(-4, 4)$

Symmetry?

	x-axis?	y-axis?	origin?	Not
$x + 3 = y^2$ $5 = y^2$ $y = \pm\sqrt{5}$	Yes	X	X	X
$\lvert x - 1 \rvert = y$ $\lvert 2-1 \rvert = 1$ $\lvert -2-1 \rvert = 3$	X	X	$(1,3)$ $(-1,-3)$ X	✓

Relative to the graph of $f(x) = x^3$, how is the graph of $g(x)$ shifted?

$g(x) = x^3 - 5$

- a. 5 units upward
- b. 5 units left
- c. 5 units right
- d. 5 units downward

Write the equation of the function given the following:

Square root function reflected in the x-axis, vertical shrink of 1/2 and 4 units down

$-\frac{1}{2}\sqrt{x} - 4$

Find the domains of $\left(\frac{f}{g}\right)(x)$ and $\left(\frac{g}{f}\right)(x)$ $\frac{\sqrt{7x}}{\sqrt{36-x^2}}$, $0 \le x < 6$

for the functions

$f(x) = \sqrt{7x}$ and $g(x) = \sqrt{36 - x^2}$. $\rightarrow$ $0 \le x \le 6$

$x \ge 0$ $-6 \le x \le 6$

a. Domain of $\left(\frac{f}{g}\right)$: (0, 6] Domain of $\left(\frac{g}{f}\right)$: [0, 6]

b. Domain of $\left(\frac{f}{g}\right)$: [0, 6) Domain of $\left(\frac{g}{f}\right)$: (0, 6] $\frac{\sqrt{36-x^2}}{\sqrt{7x}}$

$0 < x \le 6$

c. Domain of $\left(\frac{f}{g}\right)$: (- ∞ , 6) Domain of $\left(\frac{g}{f}\right)$: (-6, 6]

d. None of the above.

Given $f(x) = x - 6$ and $g(x) = 16 - x^2$, find $(g \circ f)(x)$.

- a. $-x^2 - 20$
- b. $-x^2 - 12x + 20$
- c. $-x^2 + 12x - 20$
- d. $x^2 + 12x + 52$

$= 16 - (x-6)^2$

$= 16 - (x^2 - 12x + 36)$

$= 16 - x^2 + 12x - 36$

$= -x^2 + 12x - 20$

Is $g(x) = \frac{x - 11}{15}$ the inverse function of $f(x) = \frac{15}{x - 11}$?

a. Yes

b. No

$$g(f(x)) = \frac{\left(\frac{15}{x-11}\right) - 11\frac{(x-11)}{x-11}}{15}$$

$$= \frac{\frac{15}{x-11} - \frac{11x-121}{x-11}}{15} = \frac{\frac{-11x+136}{x-11}}{15}$$

NO!
doesn't simplify
to "x"

Find the inverse function of

$f(x) = \sqrt[3]{x + 20}$.

a. $f^{-1}(x) = \sqrt[3]{x - 20}$

b. This function has no inverse function.

c. $f^{-1}(x) = x^3 - 20$

d. None of the above.

$x = \sqrt[3]{y+20}$

$x^3 = y+20$

$\boxed{y = x^3 - 20}$

Find the zeros of:

$$\frac{3x - 15}{2x + 7} = 0$$

$3x - 15 = 0$

$x = 5$