

+10 possible

Name Key

Quiz #1

Directions: Please show all work since partial credit is give, and answers without the necessary work will receive no credit. Remember, have fun!

1. Find the x and y -intercepts of the graphs of the following functions.

+2 a) $f(x) = 3 - \frac{1}{4}x$ (12, 0), (0, 3)

X-intercepts:

$$0 = 3 - \frac{1}{4}x$$

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

$$x = 12$$

$$(12, 0)$$

y-intercept: $f(0) = 3 - \frac{1}{4}(0)$

$$= 3$$

$$(0, 3)$$

+2 b) $g(x) = 2x^3 - 4x^2$ (0, 0), (2, 0)

X-int:

$$0 = 2x^3 - 4x^2$$

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

$$x = 0$$

$$x = 2$$

$$(0, 0)$$

$$(2, 0)$$

y-int: $g(0) = 0$

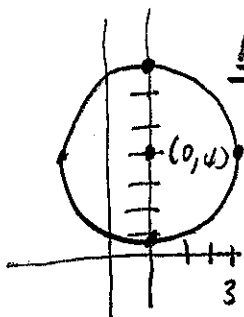
$$(0, 0)$$

+3 2. Does the equation $x^2 + (y - 4)^2 = 9$ define y as a function of x ? Justify your answer either algebraically or graphically.

Graphically:

Circle w/ center (0, 4)

and radius $r = 3$.



Not a function.

Doesn't pass the Vertical line Test.

Algebraically: Solve for y

$$(y - 4)^2 = 9 - x^2$$

$$y - 4 = \pm \sqrt{9 - x^2}$$

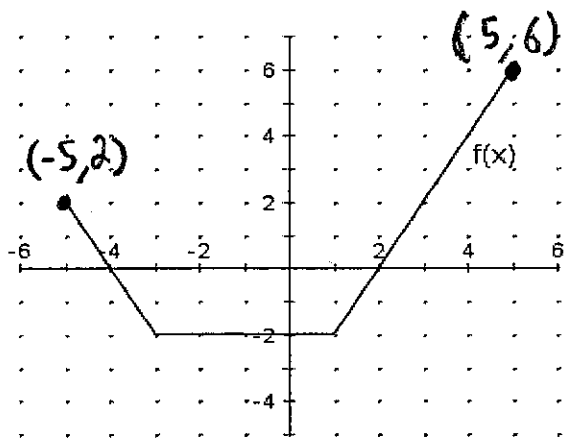
$$y = \pm \sqrt{9 - x^2} + 4$$

Not a function since we get 2 y -values (\pm) for many x -values.

+7

+3

3. Use the graph of $f(x)$ below to state the following information about the function. Please use interval notation.



Domain:	$[-5, 5]$
Range:	$[-2, 6]$
x-intercept(s):	$(-4, 0), (2, 0)$
y-intercept:	$(0, -2)$
Increasing:	$(1, 5)$
Decreasing:	$(-5, -3)$

+3