

College Alg Ch 2 Renew 2-1-2-5

Station #1
 State the **Domain**
Range tell whether it is a function explain...
 a) $g(x) = x^2 + 3$ b) $\{(2,3), (4,3), (5,3), (6,3)\}$
 Moves it up 3
 You can graph if needed

a) Yes it is a function Passed the VLT

Parent $y = x^2$

| x | y |
|----|---|
| 2 | 4 |
| -2 | 4 |
| -1 | 1 |
| 0 | 0 |
| 1 | 1 |
| 2 | 4 |

Moved up 3

Interval Not. $(-\infty, \infty)$

Domain $\{x: x \in \mathbb{R}\}$

Range $\{y: y \geq 3\}$

Station #2 Use this Answer all these questions

- a) State the **domain** $(-\infty, \infty)$
- b) State the **Range** $(-\infty, 4]$
- c) find x-intercepts $(-4, 0)$ $(4, 0)$
- d) find y-intercept $(0, 1)$
- e) find intervals where it is **increasing** $(-\infty, -2)$ and $(0, 3)$
- f) find the intervals which it is **decreasing** $(-2, 0)$ and $(3, \infty)$
- g) find values $f(x) \leq 0$ below x axis $(-\infty, -4)$ and $(4, \infty)$
- h) the x value at which $f(x)$ has a relative max $\text{😊 } x = -2$ $x = 3$

y-inter $(0, 1)$

x-inter $(-4, 0)$ $(4, 0)$

Range $(-\infty, 4]$

Increasing $(-\infty, -2)$ and $(0, 3)$

Decreasing $(-2, 0)$ and $(3, \infty)$

$f(x) \leq 0$ below x axis $(-\infty, -4)$ and $(4, \infty)$

- i) x values have a relative $x = 0$ Min ★
- j) $f(-2)$ $(-2, 4)$
- k) $f(x) = 0$ $(-4, 0)$ $(4, 0)$
- l) is $f(x)$ even or odd

If even

| | |
|----|---|
| x | y |
| -1 | 3 |
| 1 | 3 |

 You would get the same y for both -1 and 1 So Neither

graph part b #1

Domain $\{2, 4, 5, 6\}$

Range $\{3\}$

Function

Yes it is a function Passed the VLT

#3 Find the Slope between 2 points

$(5, 6)$ $(4, 7)$ $m = -1$
 $(-3, 6)$ $(-3, 14)$ $m = 0$
 $m = \frac{6-6}{5-(-3)} = 0$ $m = \frac{7-14}{4-(-3)} = -\frac{7}{7} = -1$

#4 Write an equation for a line that has these characteristics

a) Point $(-3, 4)$ $m = \frac{2}{3}$
 $y = m(x-h) + k$
 $y = \frac{2}{3}(x+3) + 4$
 $y = \frac{2}{3}x + 2 + 4$
 $y = \frac{2}{3}x + 6$
 b) $(4, 1)$ $(0, 4)$
 $m = \frac{1-4}{4-0} = -\frac{3}{4}$ $m = -\frac{5}{4}$
 $y = \frac{5}{4}x - 4$

#5 a) Write an equation

Same slope parallel to $3x - 4y = 12$
 through $(1, 5)$

$$-4y = -3x + 12$$

$$-4y = -3x + 12$$

$$-4y = -3x + 12$$

$$y = \frac{3}{4}x - 3$$

$$y = \frac{3}{4}(x-1) + 5$$

b) Perpendicular to $y = 3x - 4$ through $(-1, -3)$

$m = 3 \perp m = -\frac{1}{3}$
 $y = -\frac{1}{3}(x+1) - 3$

#6 Graph $y = 3(x-4)$

Vertical Stretch by 3
Moved Right 4

Mult y by 3
Right 4

then tell me in words how it differs from parent $y = x^3$

| x | y |
|----|----|
| -2 | -8 |
| -1 | -1 |
| 0 | 0 |
| 1 | 1 |
| 2 | 8 |

#7 Graph $y = \frac{1}{2}|x+3| - 4$

Vertical Shrink by $\frac{1}{2}$
 $\frac{1}{2}$ Moved

then tell me how it differs from $y = |x|$

| x | y |
|----|---|
| -4 | 4 |
| -2 | 2 |
| 0 | 0 |
| 2 | 2 |
| 4 | 4 |

#8 Graph $y = \sqrt{-x-5} + 3$

and how it differs from $y = \sqrt{x}$

graph then move it

Now reflect over y-axis to get

Right 5 up 3

$y = \sqrt{-x-5} + 3$