NAME:

DATE:

A2.Q1.BERMELLEMBO: **GRAPHING FUNCTIONS** **(DAY G6)**

REVIEW NOTES

TRANSFORMATIONS OF THE PARENT FUNCTIONS

NO CALCULATORS

1. NEW FUNCTION: $f(x) = 2|x-3|-6$

Horizontal Translation: shift right 3

Reflection: no

Dilation: vertical stretch x 2

Slope Ratio: $\frac{2}{1}$

Vertical Translation: shift down 6

VERTEX: $(3, -6)$

Y-INT: $y = 0$

ZERO(S): $x = 0$ $x = 6$

AXIS OF SYMMETRY: $x = 3$

On what interval of x is f increasing?

$x > 3$

On what interval of x is f decreasing?

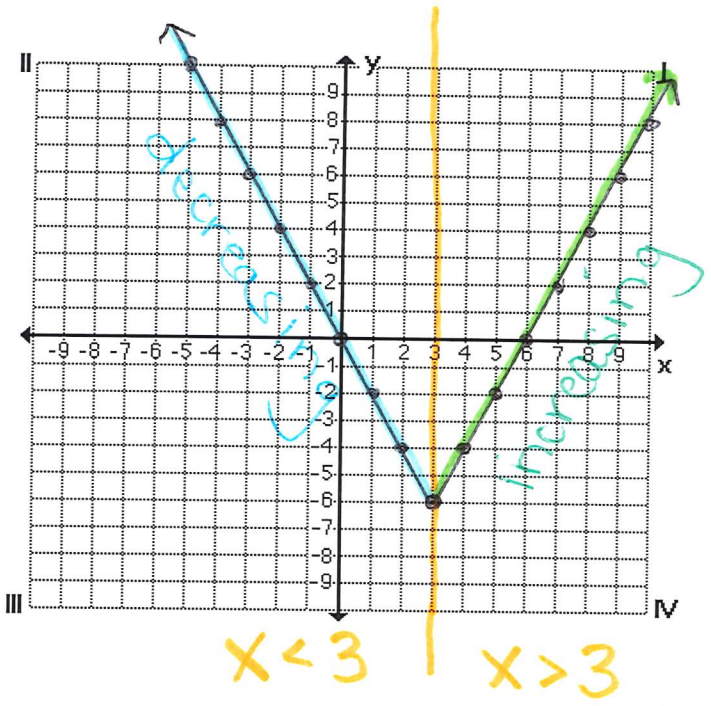
$x < 3$

On what interval of x is $f(x) > 0$?

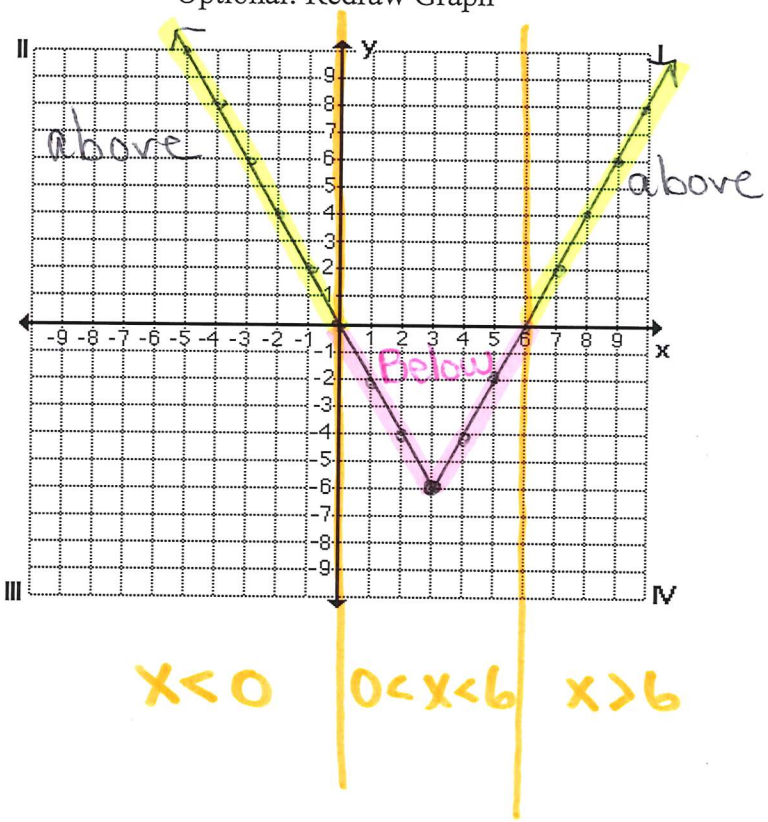
above $x < 0$ $x > 6$

On what interval of x is $f(x) < 0$?

below $0 < x < 6$



Optional: Redraw Graph



2. NEW FUNCTION: $f(x) = -(x+3)^2 + 4$

Horizontal Translation: ~~shift~~ left 3

Reflection: yes

Vertical Translation: ~~shift~~ up 4

VERTEX: $(-3, 4)$

Y-INT: $y = 1$

ZERO(S): $x = -7$ $x = 1$

AXIS OF SYMMETRY: $x = -3$

On what interval of x is f ~~increasing~~?

$x < -3$

On what interval of x is f decreasing?

$x > -3$

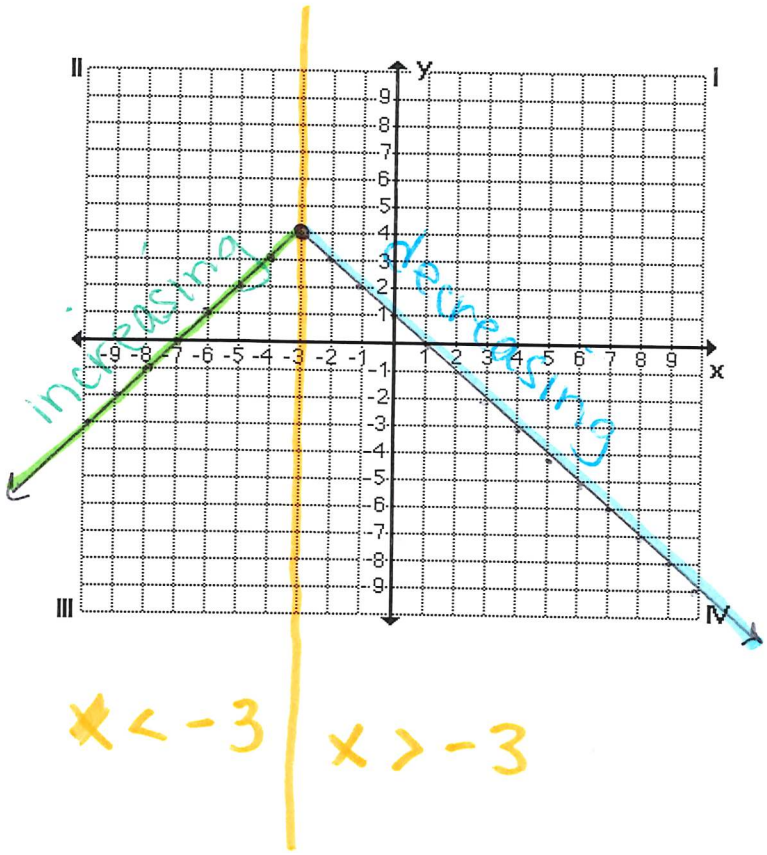
On what interval of x is $f(x) > 0$?

above $-7 < x < 1$

On what interval of x is $f(x) < 0$?

$x < -7$

$x > 1$



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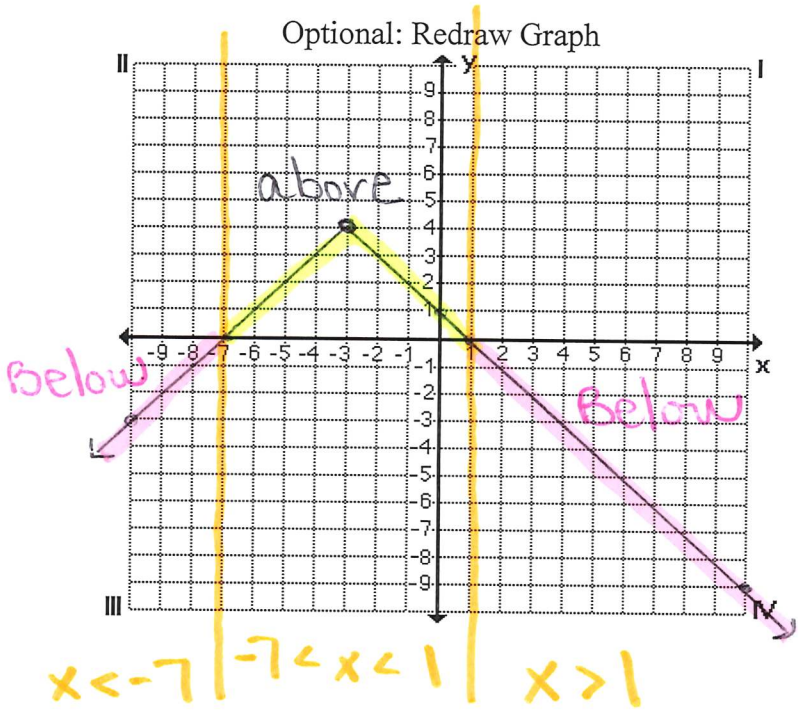


3. NEW FUNCTION: $f(x) = -\frac{1}{3}x + 3$

SLOPE: $-\frac{1}{3}$

Y-INT: $Y = 3$

ZERO(S): $X = 9$

On what interval of x is f increasing?

Never

On what interval of x is f decreasing?

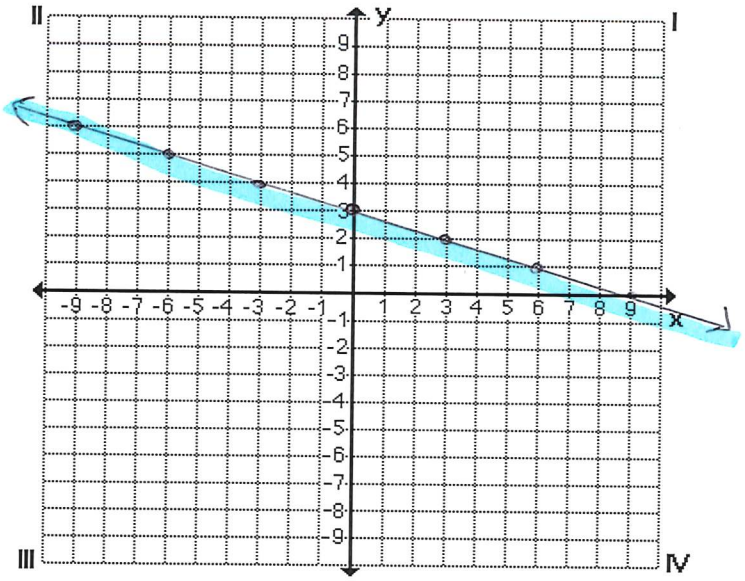
All X

On what interval of x is $f(x) > 0$?

above $X < 9$

On what interval of x is $f(x) < 0$?

$X > 9$



Optional: Redraw Graph