NAME:

DATE:

**A2.Q1.BERMEL:** **FUNCTIONS** **(DAY F5)**

NOTES

1. Consider the function: $f(x) = -\frac{3}{2}x + 6$ Let $y = f(x)$

A. Find $f(40)$ $f(40) = -\frac{3}{2}(40) + 6$

$f(40) = \boxed{-54}$

B. Find the $y$-intercept:

$f(0) = -\frac{3}{2}(0) + 6$

$f(0) = 6$

$\boxed{Y = 6}$

C. Is $x = -4$ a zero of the function? Show work.

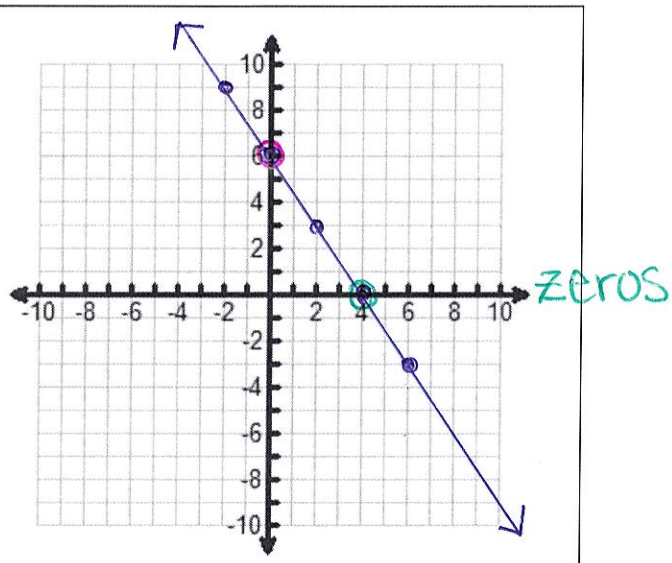
$f(-4) = -\frac{3}{2}(-4) + 6$

$f(-4) = 12$ → it is not a zero

$\boxed{NO}$

D. Construct a table of values and graph the function.

| X | Y | |
|---|---|---|
| -4 | 12 | |
| -2 | 9 | |
| 0 | 6 | y-intercept |
| 2 | 3 | |
| 4 | 0 | zero |
| 6 | -3 | |




E. Use the graph to determine the zero(s) of the function.

$\boxed{X = 4}$

F. Is the point $(18, -6)$ a point on the function? Show.

$-6 = -\frac{3}{2}(18) + 6$

$-6 \neq -21$

This is a false statement therefore, (18, -6) is NOT a point on the function.

$\boxed{NO}$

Math → Scroll Right to → NUM → Scroll down to → 1: abs(

2. Consider the function: $f(x) = -|x-2|+3$ Let $y = f(x)$

A. Find $f(-35) =$ **-34** * use the table

B. Find the *y*-intercept:

**Y = 1** $f(0) = 1$ * use the table

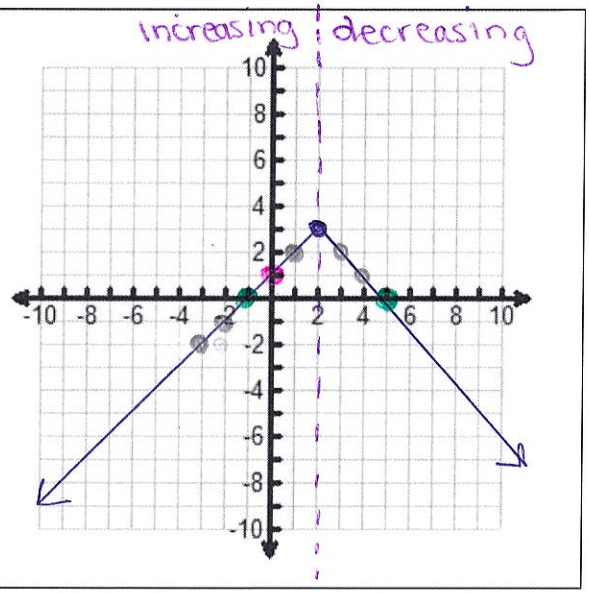
C. Is $x = 2$ a zero of the function? Show work.

$f(2) = -|(2)-2|+3$
$= -0+3$
$f(2) = 3$ → it does not equal zero

**NO**

D. Construct a table of values and graph the function.

| x | y | |
|---|---|---|
| -3 | -2 | |
| -2 | -1 | |
| -1 | 0 | zero |
| 0 | 1 | y-intercept |
| 1 | 2 | |
| 2 | 3 | vertex |
| 3 | 2 | |
| 4 | 1 | |
| 5 | 0 | zero |




E. Use the graph to determine the zero(s) of the function.

**x = -1, x = 5**

F. On what interval of *x* is the function increasing?

**x < 2**

G. On what interval of *x* is the function decreasing?

**x > 2**

3. Consider the function: $f(x) = x^2 - 6x + 5$ Let $y = f(x)$

A. Find $f(20) =$ 285 ★ use the table

B. Find the *y*-intercept:

Y = 5 $f(0) = 5$ ★ use the table

C. Is $x = -1$ a zero of the function? Show work.

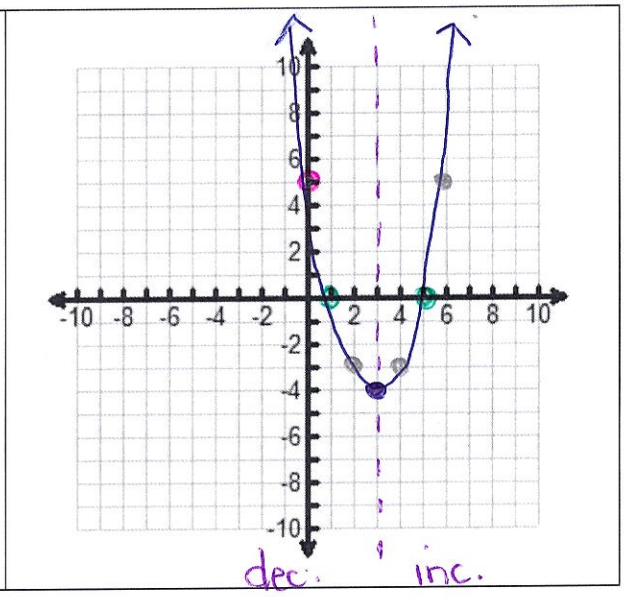
No $f(-1) = (-1)^2 - 6(-1) + 5$

$= 1 + 6 + 5$

$f(-1) = 12$ → it does not equal zero

D. Construct a table of values and graph the function.

| X | Y | |
|---|---|---|
| -1 | 12 | |
| 0 | 5 | y-intercept |
| 1 | 0 | zero |
| 2 | -3 | |
| 3 | -4 | vertex |
| 4 | -3 | |
| 5 | 0 | zero |
| 6 | 5 | |




E. Use the graph to determine the zero(s) of the function.

X = 1, X = 5

F. On what interval of *x* is the function increasing?

X > 3

G. On what interval of *x* is the function decreasing?

X < 3