Name ____ KEY 2020 ____ ID: 1

Date ____

10.2 Practice B

1) book: pg638 #5 (clearly show your work)

⑤ $y = -3x^2 + 24x - 22$

$A = -3 \quad B = 24 \quad C = -22$

AS: $x = -\dfrac{B}{2A}$ → Take opposite of B

$x = \dfrac{-24}{2(-3)}$

$\boxed{x = 4}$ ← AS is A V-LINE write in EQ FORM

Vertex (4, 26)

$y = -3(4)^2 + 24(4) - 22$

$y = 26$

2) book: pg638 #7 (clearly show your work)

⑦ $y = 6x^2 + 6x$

$A = 6 \quad B = 6 \quad C = 0$

A.S. $x = \dfrac{-6}{2(6)}$

$\boxed{x = -\dfrac{1}{2}}$ or $\boxed{x = -0.5}$

$\boxed{\text{Vertex} \left(-\dfrac{1}{2}, \dfrac{-3}{2}\right)}$

$y = 6\left(-\dfrac{1}{2}\right)^2 + 6\left(-\dfrac{1}{2}\right)$

$\boxed{y = -1.5}$ or $\boxed{y = \dfrac{-3}{2}}$

3) book: pg638 #9 (clearly show your work)

⑨ $y = -\dfrac{2}{3}x^2 - 1$

$A = \dfrac{-2}{3} \quad B = 0 \quad C = -1$

AS $x = \dfrac{0}{2(-2/3)}$

$\boxed{x = 0}$

$\boxed{\text{Vertex} (0, -1)}$

$y = -2/3(0)^2 - 1$

$y = -1$

FUNC.e.3

#4) Graph the quadratic function in standard form and identify the y-intercept, axis of symmetry, and vertex.

(a) Clearly graph at least 5 points and provide the supporting table of values in the space provided below. Mark the vertex on the table.

(b) Give the ordered pair for the y-intercept: $(0, 6)$. If possible, mark it on the graph with a "Y".

$c = 6$

(c) Calculate the axis of symmetry and give the appropriate equation. Mark it "AS" on the graph.
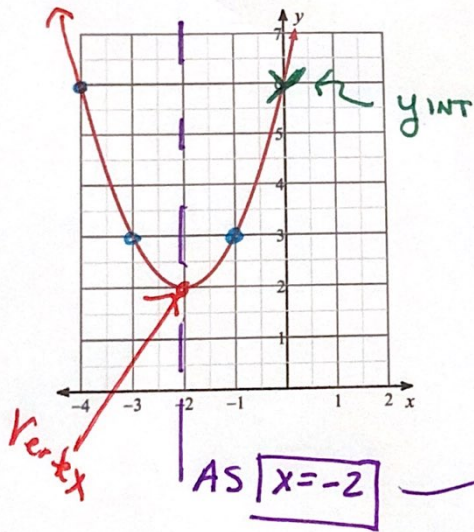
$$AS \quad x = -\frac{B}{2A} = \frac{-4}{2(1)} = -2$$

$$\boxed{x = -2}$$

(d) Give the ordered pair for the vertex $(-2, 2)$. Mark it "V" on the graph.

$$y = (-2)^2 + 4(-2) + 6$$
$$\underline{\underline{y = 2}}$$

4) $f(x) = x^2 + 4x + 6 \longrightarrow A = 1 \quad B = 4 \quad C = 6$

y INT

Vertx

AS $\boxed{x = -2}$

ⓐ

V

x	y
-4	6
-3	3
-2	2
-1	3
0	6

#5) Graph the quadratic function in standard form and identify the y-intercept, axis of symmetry, and vertex.

(a) Clearly graph at least 5 points and provide the supporting table of values in the space provided below. Mark the vertex on the table.

(b) Give the ordered pair for the y-intercept: $(0,1)$. If possible, mark it on the graph with a "Y".

$C = 1$

(c) Calculate the axis of symmetry and give the (appropriate equation.) Mark it "AS" on the graph.

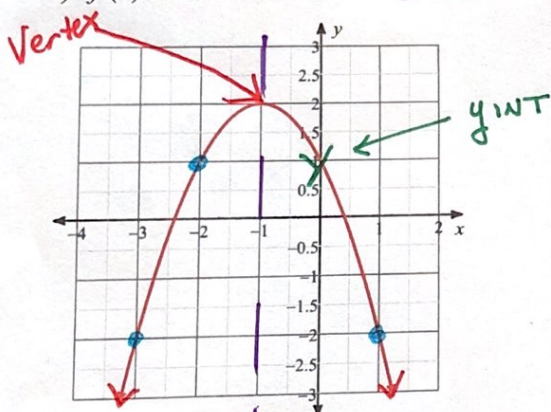$$A.S. \quad X = \frac{-B}{2A} = \frac{2}{2(-1)} = -1$$

$$\boxed{X = -1}$$

(d) Give the ordered pair for the vertex $(-1, 2)$. Mark it "V" on the graph.

5) $f(x) = -x^2 - 2x + 1 \longrightarrow A = -1 \quad B = -2 \quad C = 1$

$$y = -(-1)^2 - 2(-1) + 1$$
$$y = 2$$

Vertex

y INT

AS
X = -1

(a)

X	Y
-3	-2
-2	1
V -1	2
0	1
1	-2

Sketch the graph of each function and include a table with 5 points; label the vertex, y-intercept, & A.S.

6) $f(x) = -2x^2 + 8x - 9$

V (2, -1)
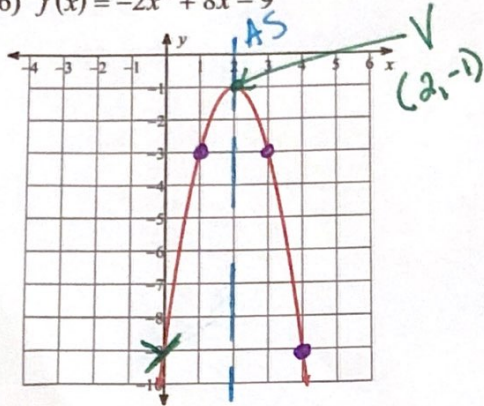
$A = -2$ $B = 8$ $C = -9$
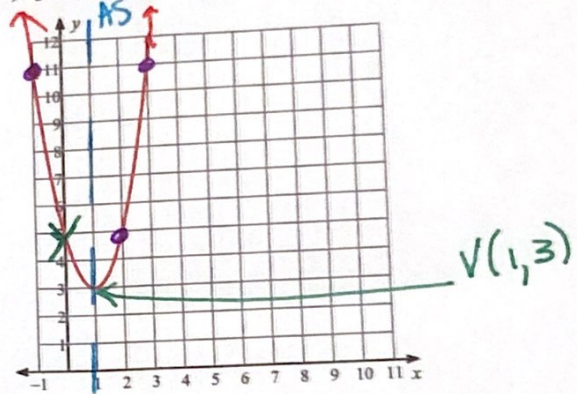
A.S. $x = \dfrac{-B}{2A} = \dfrac{-8}{2(-2)} =$

$\boxed{x = 2}$

$\boxed{\text{Vertex } (2, -1)}$

$y = -2(2)^2 + 8(2) - 9$

$\underline{\underline{y = -1}}$

x	0	1	2	3	4
y	-9	-3	-1	-3	-9

7) $f(x) = 2x^2 - 4x + 5$

V(1,3)

$A = 2$ $B = -4$ $C = 5$

A.S. $x = \dfrac{4}{2(2)}$ $\boxed{x = 1}$

$\boxed{\text{Vertex } (1, 3)}$

$y = 2(1)^2 - 4(1) + 5$

$\underline{\underline{y = 3}}$

x	-1	0	1	2	3
Y	11	5	3	5	11