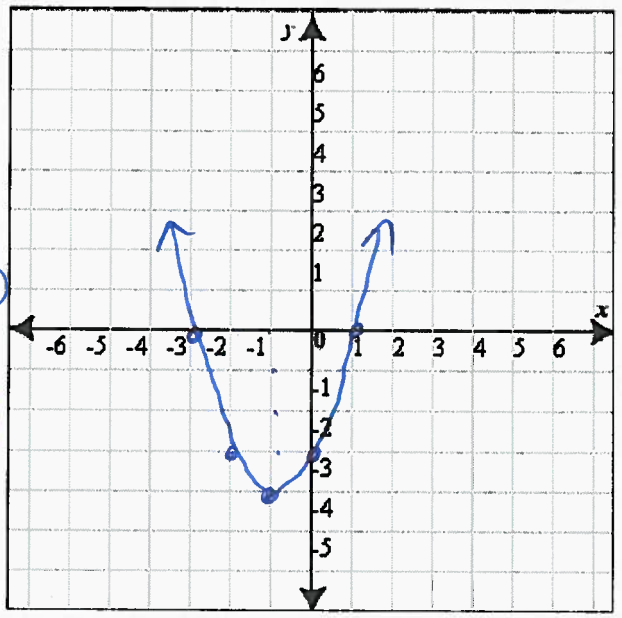
Chapter 5 – Putting it all together

Name: Key



AOS => x=-1
vertex (-1,-4)
y-int (0,-3)
x-int (-3,0) (1,0)

Correct graph is worth 2pts

$y = x^2 + 2x - 3$

$(x+3)(x-1)$

For the equation above, graph the equation & label the following on the graph.

- Axis of Symmetry (1pt) ✓
- Vertex (1pt) ✓
- y – intercept (1pt)
- x – intercepts (1pt)

y-int (0,-3)

V(-1,-4)

$x = \frac{-2}{2(1)} = -1$

$y = (-1)^2 + 2(-1) - 3$

$y = 1 - 2 - 3$

$y = -1 - 3 = -4$

Find the discriminant and state what type and how many solutions. (Discriminant = $b^2 - 4ac$) (1pt)

$4 - 4(1)(-3)$ 2R

$4 + 12 = 16$

Use the quadratic formula to find the solutions.

$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ (1pt)

$x = \frac{-2 \pm \sqrt{4 - 4(1)(-3)}}{2(1)}$

$x = \frac{-2 \pm \sqrt{16}}{2} = \frac{-2 \pm 4}{2}$

$x = \frac{-6}{2} = -3$

$x = \frac{2}{2} = 1$

Solve the equation using factoring. (2pts)

$(x+3)(x-1) = 0$

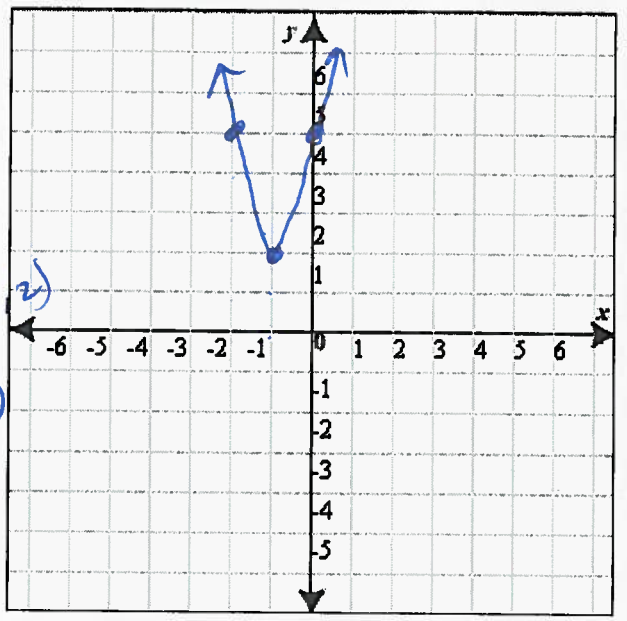
$x = -3$

$x = 1$

AOS: $x = -2$

V(-1, 2)

y int (0, 5)



Correct graph is worth 2pts

$y = 2x^2 + 4x + 5$

For the equation above, graph the equation & label the following on the graph.

- Axis of Symmetry (1pt)
- Vertex (1pt)
- y – intercept (1pt)

$2(-2)^2 + 4(-2) + 5$

$8 - 8 + 5$

$x = \frac{-4}{2(2)} = -1$

$1 - 4 + 5$

$-3 + 5 = 2$

V(-1, 2)

y int (0, 5)

Find the discriminant and state what type and how many solutions. (Discriminant = $b^2 - 4ac$) (1pt)

$16 - 4(2)(5)$ 2 C

$16 - 40 = -24$

Use the quadratic formula to find the solutions.

$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ (1pt)

$x = \frac{-4 \pm \sqrt{16 - 4(2)(5)}}{2(2)}$

$x = \frac{-4 \pm i\sqrt{24}}{4}$

$\sqrt{24}$

6 4

3 2 2 2

$x = \frac{-4 \pm 2i\sqrt{6}}{4}$

$x = \frac{-2 \pm i\sqrt{6}}{2}$

Describe the relationship between your solutions to quadratic formula and what you see for your graph. (3pts)

Solutions are complex and this is shown on the graph with no x-intercepts.