Quadratic Test 1 REVIEW

Talley

1. Write the equation in standard form:

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

$(x-4)(x-4)$

$-2(x^2-8x+16)+5$

$-2x^2+16x-32+5$

Solution $-2x^2-16x-27$

2.
Simplify Each Product. Write your answer in standard form.

$x+3)(2x-5)$

| | $x$ | $+3$ |
|---|---|---|
| $2x$ | $2x^2$ | $6x$ |
| $-5$ | $-5x$ | $-15$ |

Solution $2x^2+x-15$

3.
Simplify Each Product. Write your answer in standard form.

$(x+6)(x^2-4x+3)$

| | $x^2$ | $-4x$ | $+3$ |
|---|---|---|---|
| $x$ | $x^3$ | $-4x^2$ | $3x$ |
| $+6$ | $6x^2$ | $-24x$ | $18$ |

Solution $x^3+2x^2-21x+18$

4.

Factor each expression and check your answer.

$3x^2 - x - 4$

-12
3 -4
-1

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

Solution $(x+1)(3x-4)$

5.

Factor each expression and check your answer.

$2x^2 - 12x + 10$

$2(x^2 - 6x + 5)$

5
-1 -5
-6

$\frac{-1}{x}$ $\frac{-5}{x}$

Solution $2(x-1)(x-5)$

6. Graph each function. Label the axis of symmetry and the vertex.

$y = x^2 + 2x + 1$

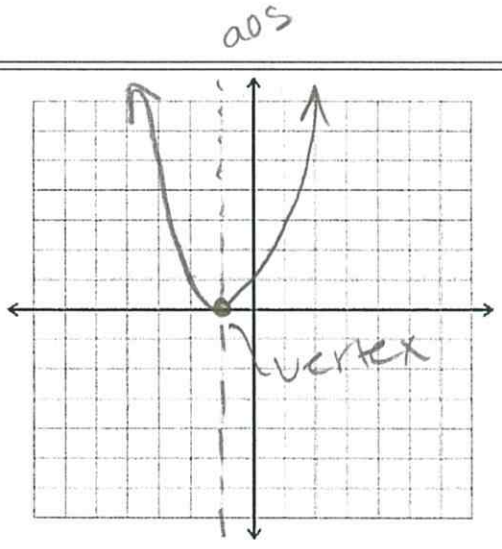
$(-1)^2 + 2(-1) + 1$

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

b: 2 $(-1$

c: 1 $y = 0$

$(-1, 0)$



7. Graph each function. Label the axis of symmetry and the vertex.

$y = -3x^2 + 6$

a: $-3$

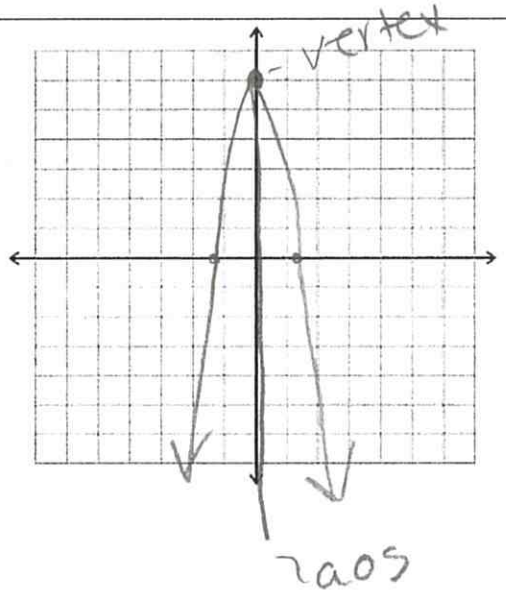
b: $0$

c: $6$

$x = \frac{0}{2(-3)} = 0$

$x = 0$

$y = 6$




8. Graph the equation in your calculator. Identify the vertex and axis of symmetry. Identify a, h and k and describe how they affect the parabola. Is the parabola a minimum or maximum?

a: 2 (opens up)

h: 2 shifts right

k: -2 shifts down

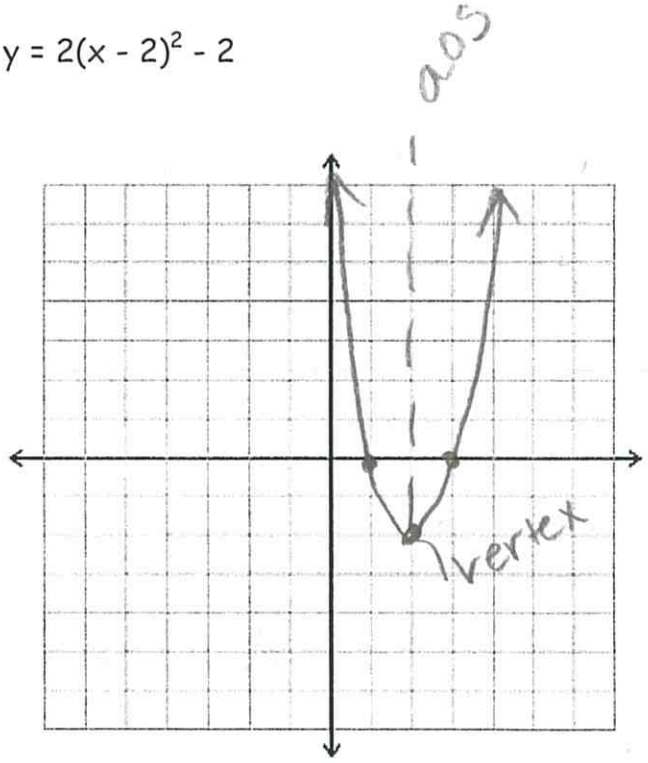
Vertex: (2, -2)

Axis of Symmetry: $x = 2$

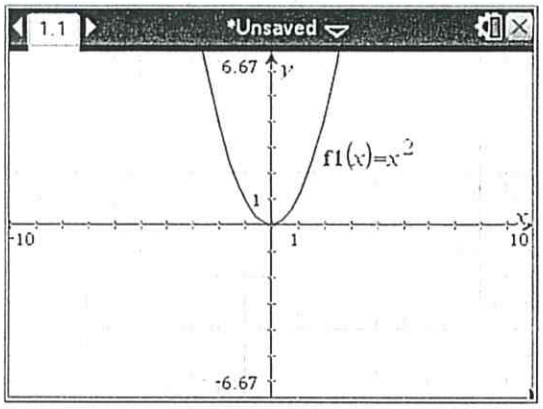
Minimum or Maximum

Sketch the graph here. Label the vertex and axis of symmetry.

$y = 2(x - 2)^2 - 2$



9.
Identify the vertex and axis of symmetry for each graph. Tell whether it's a minimum or a maximum.




Vertex: (0,0)

Axis of Symmetry: x=0

Minimum or Maximum

10. Graph the equation in your calculator. Identify the vertex and axis of symmetry. Identify a, h and k and describe how they affect the parabola. Is the parabola a minimum or maximum?

a: -4 (opens down)

h: -2 Shifts left

k: 1 Shifts up

Vertex: (-2,1)

Axis of Symmetry: x=-2

Minimum or Maximum

Sketch the graph here. Label the vertex and axis of symmetry.

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