

More Vertex Form Practice

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For each equation, identify the concavity, the vertex, the axis of symmetry, and the y-intercept. Show your work!

1) $y = -2(x - 7)^2 + 4$

① concave down

② $(7, 4)$

③ $x = 7$

④ $(0, -94)$

$-2(0-7)^2 + 4$

4) $y = -(x + 3)^2 - 9$

① concave down

② $(-3, -9)$

③ $x = -3$

④ $(0, -18)$

$-1(0+3)^2 - 9$

2) $y = 3(x - 5)^2 - 11$

① concave up

② $(5, -11)$

③ $x = 5$

④ $(0, 64)$

$3(0-5)^2 - 11$

5) $y = -4(x - 8)^2 + 3$

① concave down

② $(8, 3)$

③ $x = 8$

④ $(0, -253)$

$-4(0-8)^2 + 3$

3) $y = (x + 8)^2 + 6$

① concave up

② $(-8, 6)$

③ $x = -8$

④ $(0, 72)$

$(0+8)^2 + 6$

6) $y = 6(x + 11)^2 + 7$

① concave up

② $(-11, 7)$

③ $x = -7$

④ $(0, 733)$

$6(0+11)^2 + 7$

One E practice problem:

Determine the vertex, roots, and y-intercept of the function. Show your work.

$f(x) = (x + 3)^2 - 36$

vertex: $(-3, -36)$ roots: $(3, 0)$ & $(-9, 0)$ y-intercept: $(0, -27)$

$(0+3)^2 - 36$

Axis of symmetry: $x = -3$

Work:

$(x+3)^2 - 36 = 0$

$x^2 + 6x + 9 - 36 = 0$

$x^2 + 6x - 27 = 0$

$(x-3)(x+9) = 0$

$x-3=0$

$x=3$

$x+9=0$

$x=-9$