Parabolas

In the following problems, rewrite the problems in vertex form, then identify the vertex, axis of symmetry, and y-intercepts.

Ex. $y = x^2 + 6x - 1$
$= x^2 + 6x + \underline{\quad} - 1 - \underline{\quad}$ Complete the square, ½ and + square
$\qquad\quad 3$
$= x^2 + 6x + 9 - 1 - 9$ Add/subtract 9
$= (x+3)^2 - 10$ → V(−3, −10) axis x = −3, y_{int} (0, −1)

1. $y = x^2 + 4x - 3$

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

3. $y = x^2 + 6x - 5$

4. $y = x^2 - 4x + 3$

5. $y = x^2 + 2x - 2$

6. $y = x^2 + 8x - 4$

7. $y = x^2 - 6x + 5$

8. $y = x^2 - 8x + 4$

9. $y = x^2 - 2x + 4$

10. $y = x^2 + 4x - 2$