

1. Zeros of $y = (x - 2)(x - 6)$?

Set each = 0

Answer: $x = 2$ and 6

2. Zeros of $y = (x + 4)(x - 1)$?

$x + 4 = 0$; $x - 1 = 0$

Answer: $x = -4$ and 1

3. Write factored form for a parabola with zeros 3 and -5.

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

Answer: $y = (x - 3)(x + 5)$

4. Write factored form for zeros 0 and 7.

$(x)(x - 7)$

Answer: $y = x(x - 7)$

5. Expand $y = (x - 2)(x - 6)$ to standard form.

$x^2 - 8x + 12$

Answer: $y = x^2 - 8x + 12$

6. A parabola has zeros -2 and 4. Where is its axis of symmetry?

Midpoint: $(-2 + 4)/2$

Answer: $x = 1$

7. Factored form $y = (x + 3)(x - 3)$: zeros, and y-intercept?

Zeros $+3$; y-int at $x=0$: $(3)(-3)$

Answer: zeros $+3$; y-int $(0, -9)$

8. $y = 2(x - 1)(x - 5)$: zeros and how the 2 affects the graph?

Zeros 1, 5; $a = 2$ narrows

Answer: zeros 1 & 5; narrower, opens up

9. A parabola has zeros -1 and 3 and passes through (1, -8). Find 'a' in $y = a(x + 1)(x - 3)$. ★ challenge

$-8 = a(2)(-2) = -4a$

Answer: $a = 2$

10. Build a quadratic (standard form) with zeros -4 and 6 that passes through (0, -48). Find a first. ★ challenge

$y = a(x+4)(x-6)$; at $x=0$: $-24a = -48$

$a = 2$; expand

Answer: $y = 2x^2 - 4x - 48$