

1. Factor $x^2 + 5x + 6$.

$x^2 = 6$, +: 2 and 3

Answer: $(x + 2)(x + 3)$

2. Factor $x^2 + 7x + 10$.

2 and 5

Answer: $(x + 2)(x + 5)$

3. Factor $x^2 - 8x + 15$.

Multiply +15, add -8: -3, -5

Answer: $(x - 3)(x - 5)$

4. Factor $x^2 + 2x - 8$.

Multiply -8, add +2: +4, -2

Answer: $(x + 4)(x - 2)$

5. Factor $x^2 - 3x - 10$.

-5 and +2

Answer: $(x - 5)(x + 2)$

6. Factor $x^2 - 36$. (A trinomial with $b = 0$!)

Numbers: +6, -6

Answer: $(x + 6)(x - 6)$

7. Factor $x^2 - 8x - 20$. (Trainer echo - Aug 2025 Q4 zeros!)

-10 and +2

Answer: $(x - 10)(x + 2)$

8. Factor $x^2 - 26x - 120$. (Trainer echo - Jan 2026 Q4!)

Multiply -120, add -26: -30, +4

Answer: $(x + 4)(x - 30)$

9. Factor $x^2 + 5x - 24$, then state the zeros of $y = x^2 + 5x - 24$. ★ challenge

+8 and -3

Zeros flip the signs

Answer: $(x + 8)(x - 3)$; zeros -8, 3

10. The rectangle $x^2 + 11x + 24$ has sides $(x + ?)$ and $(x + ?)$. Find both, and give the sides when $x = 5$. ★

3 and 8

$x = 5$: sides 8 and 13

Answer: $(x+3)(x+8)$; 8 by 13