

1. $(x + 3)(x - 3) = ?$

Middles cancel

Answer: $x^2 - 9$

2. $(x + 7)(x - 7) = ?$

$a^2 - b^2$

Answer: $x^2 - 49$

3. Factor $x^2 - 25$.

squares: x and 5

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

4. Factor $x^2 - 64$.

x and 8

Answer: $(x + 8)(x - 8)$

5. $(2x + 5)(2x - 5) = ?$

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

Answer: $4x^2 - 25$

6. Factor $9x^2 - 16$.

$3x$ and 4

Answer: $(3x + 4)(3x - 4)$

7. Factor $100x^2 - 16$. (Trainer echo - Aug 2025 Q1!)

$10x$ and 4

Answer: $(10x + 4)(10x - 4)$

8. Why can't $x^2 + 25$ be factored the same way?

SUM of squares - middles would ADD

Answer: no real factors - not a difference

9. Factor $2x^2 - 50$ completely. ★ challenge

GCF 2 first: $2(x^2 - 25)$

Then conjugates

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

10. Compute 41×39 in your head using conjugates. ★ challenge

$(40 + 1)(40 - 1) = 1600 - 1$

Answer: 1599