

1. Factor $6x + 9$.

GCF is 3

Answer: $3(2x + 3)$

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

GCF is $4x$

Answer: $4x(x + 2)$

3. Factor $10x - 15$.

GCF 5

Answer: $5(2x - 3)$

4. Factor $x^3 + 5x^2$.

GCF x^2

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

5. Factor $12x^3 - 18x^2$.

GCF $6x^2$

Answer: $6x^2(2x - 3)$

6. Factor $3x^2 + 24x$.

GCF $3x$

Answer: $3x(x + 8)$

7. Factor $7x^4 - 14x^2 + 21x$.

GCF $7x$

Answer: $7x(x^3 - 2x + 3)$

8. Factor $3x^2 = 24x$ into solved form: $3x^2 - 24x = 0$, then factor. (Trainer echo - Aug 2025 Q10!)

$3x(x - 8) = 0$

Answer: $x = 0$ or $x = 8$

9. Factor $-8x^3 - 12x^2$ by pulling out a NEGATIVE GCF. ★ challenge

GCF $-4x^2$

Answer: $-4x^2(2x + 3)$

10. Factor $x^3 - 36x$ completely. (Trainer echo - June 2025 Q30!) ★ challenge

GCF x first: $x(x^2 - 36)$

Then difference of squares

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