Practice Run

Fully factor the following expressions.

1. $3x^2 - 9x$	2. $x^2 - x - 30$
3. $12x^2 - 5x - 3$	4. $2n^2 + 9n + 4$

Compare your answers.

Fully factor the following expressions.

1. $3x^2 - 9x$ GCF = $3x$ $\frac{3x^2}{3x} - \frac{9x}{3x} = (x - 3)$ $3x^2 - 9x = 3x(x - 3)$	2. $x^2 - x - 30$ Product of $-30 = (-6)(5)$ and the Sum of $-1 = -6 + 5$ $x^2 - x - 30 = (x - 6)(x + 5)$
3. $12x^2 - 5x - 3$ Product of $(12)(-3) = -36 = (-9)(4)$ and the Sum of $-5 = (-9) + 4$ $12x^2 - 5x - 3 = 12x^2 - 9x + 4x - 3$ $= (12x^2 - 9x) + (4x - 3)$ $= 3x(4x - 3) + 1(4x - 3)$ $= (4x - 3)(3x + 1)$	4. $2n^2 + 9n + 4$ Product of $2 \times 4 = 8 = 8 \times 1$ and the Sum of $9 = 8 + 1$ $2n^2 + 9n + 4 = 2n^2 + 8n + 1n + 4$ $= (2n^2 + 8n) + (1n + 4)$ $= 2n(1n + 4) + 1(1n + 4)$ $= (n + 4)(2n + 1)$