

1.3 Factoring Quadratics Day 1

Factor each completely. Reminder: check for a GCF when $a \neq 1$.

$$x^2 + x - 90$$

$$M\# : \frac{-90}{10-9}$$

$$\begin{aligned} & \underbrace{x^2 + 10x} - \underbrace{9x - 90} \\ & x(x+10) - 9(x+10) \end{aligned}$$

$$\boxed{(x+10)(x-9)}$$

$$k^2 - 7k + 12$$

$$\begin{aligned} & \underbrace{k^2 - 3k} - \underbrace{4k + 12} \\ & k(k-3) - 4(k-3) \end{aligned}$$

$$\boxed{(k-3)(k-4)}$$

$$\frac{12}{-3-4}$$

$$x^2 - 4x - 45$$

$$\frac{-45}{-9+5}$$

$$\begin{aligned} & \underbrace{x^2 - 9x} + \underbrace{5x - 45} \\ & x(x-9) + 5(x-9) \end{aligned}$$

$$\boxed{(x-9)(x+5)}$$

$$5n^2 + 30n + 40$$

$$\begin{aligned} & \underbrace{5n^2 + 10n} + \underbrace{20n + 40} \\ & 5n(n+2) + 20(n+2) \end{aligned}$$

$$\boxed{5(n+2)(n+4)}$$

$$\frac{200}{10 \quad 20} \quad \frac{8}{2 \quad 4}$$

$$\begin{aligned} & 5(n^2 + 6n + 8) \\ & \quad n^2 + 2n + 4n + 8 \\ & \quad n(n+2) + 4(n+2) \end{aligned}$$

$$\boxed{5(n+2)(n+4)}$$

$$-2x^2 - 6x - 4$$

$$\frac{2}{12}$$

$$-2(x^2 + 3x + 2)$$

$$\begin{aligned} & \underbrace{x^2 + 1x} + \underbrace{2x + 2} \\ & x(x+1) + 2(x+1) \end{aligned}$$

$$\boxed{-2(x+1)(x+2)}$$

$$9p^2 - 39p + 30$$

$$\begin{aligned} & 3(3p^2 - 13p + 10) \\ & \underbrace{3p^2 - 10p} - \underbrace{3p + 10} \\ & p(3p-10) - 1(3p-10) \end{aligned}$$

$$\boxed{3(3p-10)(p-1)}$$

$$\frac{30}{-10 \quad -3}$$