

March 9, 2012

Get out **Blue** Factoring WS1



3/9 - Factoring Trinomials with a Lead Coefficient other than One

$$2x^2 + 11x + 9$$

$1 \cdot 2$ $2 \cdot 9$ $1 \cdot 9$
 $3 \cdot 3$

$$= (x + 1)(2x + 9)$$

$2x$
 $9x$

$$3k^2 - 26k + 35$$

$1 \cdot 3$ $21 \cdot 5$ $1 \cdot 35$
 $5 \cdot 7$

$$= (k - 7)(3k - 5)$$

$21k$
 $5k$

$$\begin{array}{r}
 6x^2 + 13x + 6 \\
 \begin{array}{ccc}
 1 \cdot 6 & 9 \cdot 4 & 1 \cdot 6 \\
 \underline{2 \cdot 3} & & \underline{2 \cdot 3}
 \end{array} \\
 = (2x + 3)(3x + 2) \\
 \begin{array}{r}
 + 9x \\
 + 4x \\
 \hline
 x \mid 3x
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 4p^2 + 27p + 18 \\
 \begin{array}{ccc}
 1 \cdot 4 & 3 \cdot 24 & 1 \cdot 18 \\
 \underline{2 \cdot 2} & & \underline{3 \cdot 6}
 \end{array} \\
 = (p + 6)(4p + 3) \\
 \begin{array}{r}
 + 24p \\
 + 3p \\
 \hline
 + 27p
 \end{array}
 \end{array}$$

$$7x^2 - 3x - 4$$

$\underbrace{1 \cdot 7}_{\text{1} \cdot \text{7}} \quad \underbrace{-7 \cdot +2}_{\text{7} \cdot \text{+2}} \quad \underbrace{+2 \cdot -2}_{\text{2} \cdot \text{-2}}$

$$= (1x - 1)(7x + 4)$$

$\begin{array}{r} -7x \\ +4x \\ \hline \end{array}$

$$3m^2 - m - 30$$

$\underbrace{1 \cdot 3}_{\text{1} \cdot \text{3}} \quad \underbrace{9 \cdot -10}_{\text{9} \cdot \text{-10}} \quad \underbrace{-30}_{\text{-30}}$

$\begin{array}{r} 3 \cdot 10 \\ 5 \cdot 6 \\ \hline \end{array}$

$$= (m + 3)(3m - 10)$$

$\begin{array}{r} +9m \\ -10m \\ \hline -1m \end{array}$

$$4x^2 - 3x - 27$$

$\frac{1 \cdot 4}{2 \cdot 2}$ $2 \cdot 9$ $\frac{1 \cdot 27}{3 \cdot 9}$

$$= (x - 3)(4x + 9)$$

$\begin{array}{r} -12 \\ +9 \\ \hline \end{array}$

$$5r^2 + 34r - 48$$

$\frac{1 \cdot 5}{40 \cdot 6}$ $1 \cdot 48$
 $2 \cdot 24$
 $3 \cdot 16$
 $4 \cdot 12$
 $6 \cdot 8$

$$= (r + 8)(5r - 6)$$

$\begin{array}{r} +40 \\ -6 \\ \hline +34 \end{array}$

$$\begin{aligned}
 & 18r^2 + 6r - 4 \\
 & = 2(9r^2 + 3r - 2) \\
 & \quad \begin{array}{ccc}
 1 \cdot 9 & & 6 \cdot 3 \quad 1 \cdot 2 \\
 \underline{3 \cdot 3} & &
 \end{array} \\
 & = 2(3r-1)(3r+2) \\
 & \quad \begin{array}{r}
 -3r \\
 +6r
 \end{array}
 \end{aligned}$$

$$\begin{aligned}
 & 27n^2 - 33n + 6 \\
 & = 3(9n^2 - 11n + 2) \\
 & \quad \begin{array}{ccc}
 1 \cdot 9 & & 1 \cdot 2 \\
 \underline{3 \cdot 3} & &
 \end{array} \\
 & = 3(n-1)(9n-2) \\
 & \quad \begin{array}{r}
 -9n \\
 +2n
 \end{array}
 \end{aligned}$$

$$30x^2 + 85x + 35$$

$$18n^2 - 24n - 64$$

Homework

Green Factoring WS2

Due **Tuesday**
