

Factoring:Review:

1) $n^2 - 5n + 6 \rightarrow (n-3)(n-2)$

$$\begin{array}{c} n-3 \\ \hline n-2 | \begin{array}{cc|c} n^2 & & -3n \\ & -2n & 6 \end{array} \end{array}$$

f of 6

$$\begin{array}{c} 2, 3 \\ -2, -3 = -5 \\ 1, 6 \\ -1, -6 \end{array}$$

$$2) x^2 - 225$$

$$(x + 15)(x - 15)$$

$$\begin{array}{r} x + 15 \\ \hline x | x^2 & 15x \\ - 15 | \cancel{x^2} & \cancel{- 15x} \\ \hline & -225 \end{array}$$

$$\begin{aligned} &x^2 + 15x - 225 \\ &x^2 - 225 \end{aligned}$$

Part 3: Reverse Distribution

$$1) \cancel{3x^2} \cdot \cancel{x} - \cancel{9x}$$

$$3x(\cancel{1x} - \cancel{3})$$

$$2) \cancel{8x^3} \cdot \cancel{x} - \cancel{12x^2}$$

$$4x^2(2x - 3)$$

$$3) 4v^2 - 4v - 8$$

$$4(v^2 - v - 2)$$

$$\begin{array}{r} \cancel{v} \\ + 1 \\ \hline \end{array} \quad \begin{array}{c} v - 2 \\ \hline \boxed{\begin{array}{c|cc} v^2 & -2v \\ \hline v & -2 \end{array}} \end{array}$$

$$4(v-2)(v+1)$$

$$\frac{f_0 f_{-2}}{1, 2} = \frac{1, -2}{1, -1} = -1$$

✓. ✓. ✓
 ✓. ✓
 ✓

$$\textcircled{4} \quad 5v^3 - 30v^2 + 40v$$

$$5v(v^2 - 6v + 8)$$

$$\overline{v - 4}$$

v	v^2	$\cdot 4v$
-2	-2v	8

 $5v(v-4)(v-2)$

$$\frac{f \circ f}{\cancel{a}, \cancel{4} = \cancel{6}}$$

$$\cancel{-2}, \cancel{-4} = \cancel{-6}$$

$$-1, -8$$

$$1, 8$$

Part 4: Solve the Chunks

$$\textcircled{1} \quad 5v^3 - 30v^2 + 40v = 0$$

\downarrow (see last slide)

$$\underline{5v(v-2)(v-4)} = 0$$

$$\frac{5v}{5} = 0$$

$$\boxed{\begin{array}{l} v = 0 \\ \text{or} \\ v = 2 \\ \text{or} \\ v = 4 \end{array}}$$

solution
"zeros"

$$\cancel{v-2} = 0$$

$$\cancel{v-4} = 0$$

2 sol.

$$\textcircled{2} \quad 6v^2 + 66v + 60 = 0$$

$$6(v^2 + 11v + 10)$$

$$\begin{array}{c} v^2 + 11v \\ \hline +10 \end{array}$$

10, 1

$$6(v+1)(v+10) = 0$$

$$v+1=0 \quad v=-1$$

$$v+10=0 \quad v=-10$$

or

$$\begin{aligned} ③ \quad & 3x^2 - 75 \\ & 3(\cancel{1x^2 - 25}) \\ & \boxed{3(x-5)(x+5)} \end{aligned}$$