

## 13.4 – Factoring Quartics

Example 1: Factor  $x^4 - 2x^2 - 8$ .

Factors of 8 that subtract to 2.

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

$$\begin{array}{r} 8 \\ \wedge \\ -4 + 2 = -2 \end{array}$$

Example 2: Factor  $x^4 + 7x^2 + 6$ .

Factors of 6 that add to 7.

$$(x^2 + 6)(x^2 + 1)$$

$$\begin{array}{r} 6 \\ \wedge \\ +6 + 1 = +7 \end{array}$$

Example 3: Factor  $x^4 - 3x^2 - 10$ .

Factors of 10 that subtract to 3.

$$(x^2 - 5)(x^2 + 2)$$

$$\begin{array}{r} 10 \\ \wedge \\ -5 + 2 = -3 \end{array}$$