

Warm - Up  
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Factor by using any method

$$\begin{array}{l} \textcircled{8}t^2 + \textcircled{97}t + \textcircled{12} \longrightarrow (8t^2 + 96t) + (t + 12) \\ \times 96 \qquad \qquad \qquad 8t(t + 12) + 1(t + 12) \\ \hline \textcircled{96} \quad \textcircled{1} \\ \hline +97 \end{array}$$
$$\boxed{(t+12)(8t+1)}$$

***Procedure – Factoring Polynomials***

1. Write the polynomial in standard form.
2. Factor any G.C.F.
3. Choose the appropriate procedure.
  - a. Binomial – Difference of two squares.
  - b. Trinomial – Guess and check  
Perfect square trinomials  
AC method.
  - c. Four terms – Factor by grouping.
4. Return to step 2 with any factor that isn't prime.

## Factor Completely

$$m^2 - n^2 \\ (m+n)(m-n)$$

$$-x^3 + x \\ -(x) \cdot x \cdot x \quad -(x) \cdot 1 \\ -x(x^2 - 1)$$

$$-x(x+1)(x-1)$$

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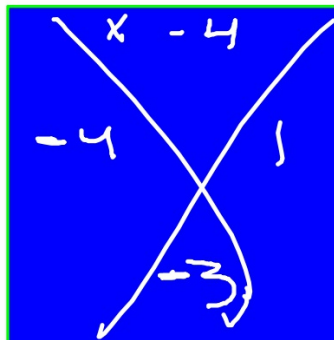
### Factor Completely

$$8t^2 - 12t - 8$$

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

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$$\begin{aligned} & \downarrow 4(2t^2 - 4t) + 1(t - 2) \\ & 4(2t(t - 2) + 1(t - 2)) \\ & 4(t - 2)(2t + 1) \end{aligned}$$

$$m^2 + 2mn + n^2 / m^2 - 2mn + n^2$$

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### Factor Completely

$$15 - 4k^2 + 4k$$

$$-4k^2 + 4k + 15$$

$$ac = -60, b = -4$$

$$-1(4k^2 - 4k - 15)$$

$$2 \times 2 \times 3 \times 5$$

$$1 \times 60$$

$$-1(4k^2 + 6k - 10k - 15)$$

$$2 \times 30$$

$$3 \times 20$$

$$-1(2k(2k + 3) - 5(2k + 3))$$

$$4 \times 15$$

$$5 \times 12$$

$$-1(2k + 3)(2k - 5)$$

$$6 \times -10$$

