

Warm - Up
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Factor the following trinomial (by using one of the formulas from yesterday)

$$x^2 + 10x + 25$$

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

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

$(x + 5)^2$

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.

Prime Factorization

Factorization

$$2 \times 6$$

$$(3x^2 + 6)(x + 4)$$

$$(x^2 - 9)(x - 1)$$

Prime Factorization

$$2 \times 2 \times 3$$

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

$$(x - 3)(x + 3)(x - 1)$$



Factor Completely

$$r^3 - 11r^2 + 30r$$

$$\begin{aligned} r^2 &= (r) \cdot (r) \\ -5r &= (r) \cdot (5) \cdot (-1) \\ -6r &= (2) \cdot (3) \cdot (r) \cdot (-1) \\ 30 &= (2) \cdot (3) \cdot (5) \cdot (-1) \end{aligned}$$

$$1 \cdot 30 = ac$$

$$-11 = b$$

$$\begin{array}{ccc} & 30 & \\ -5 & \times & -6 \\ & -11 & \end{array}$$

$$r(r^2 - 11r + 30)$$

$$r((r^2 - 5r) + (6r + 30))$$

$$r[r(r-5) + 6(r-5)]$$

$$r[(r-5)(r-6)]$$

$$\begin{array}{r} 9 \\ 5 \end{array} \begin{array}{r} -36 \\ -36 \end{array}$$

Factor Completely

$$36 - p^2 - 5p$$

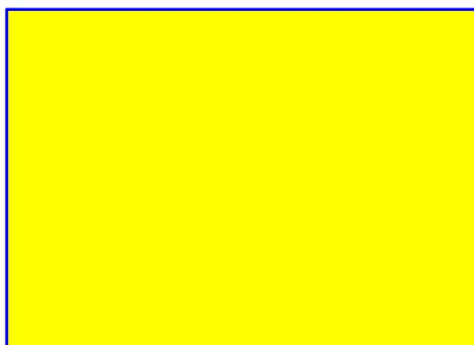
$$-1[(p^2 - 4p) + (9p - 36)]$$

$$-p^2 - 5p + 36$$

$$-1[p(p-4) + 9(p-4)]$$

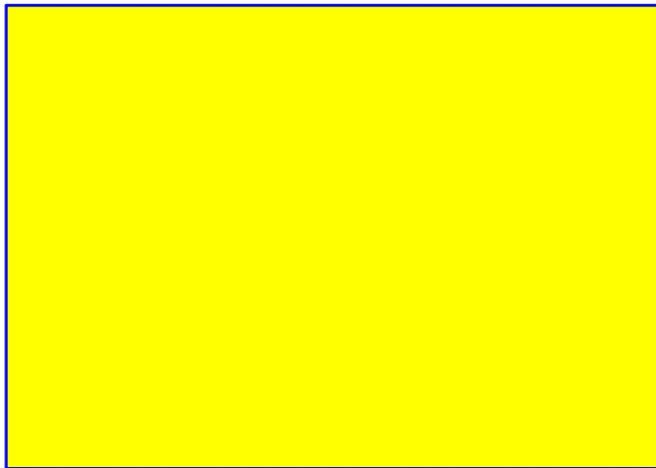
$$-1(p^2 + 5p - 36)$$

$$-1[(p-4)(p+9)]$$



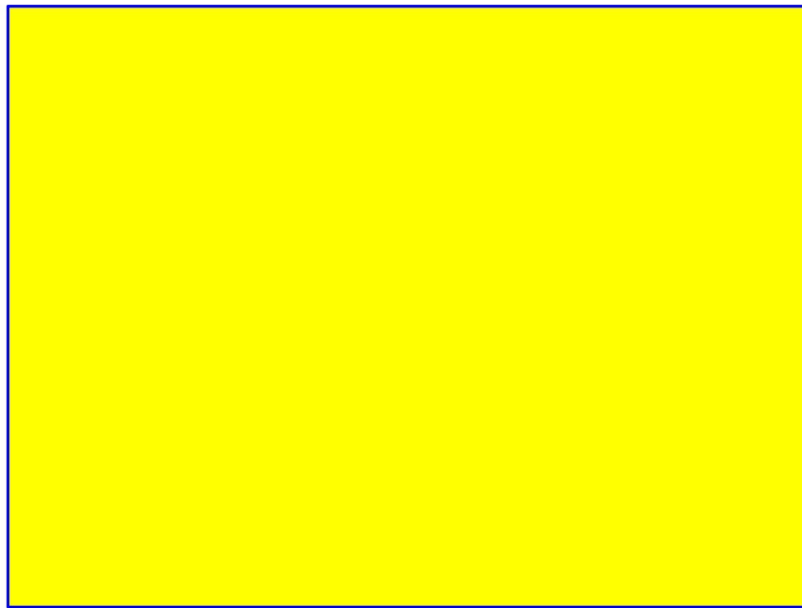
Factor Completely

$$3x^3 - 7x^2 - 27x + 63$$



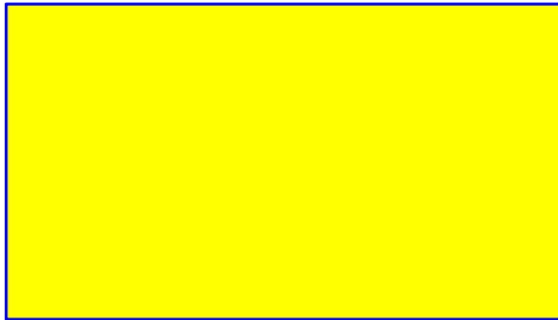
Factor Completely

$$6y^2 - 22y - 8$$



Factor Completely

$$-y + 9y^3$$



Homework (due Tue)
p. 97 (31 - 46 any 10)

