

Mixed Factoring

What procedure do I use to factor? What should I look for first?

1. Pull out any Greatest Common Factors

2. Look for "perfects"

...do I have a binomial that contains the difference of perfect squares?

3. Do I have a trinomial that needs to be factored into two binomials?

$$\begin{pmatrix} x^2 - x - 6 \\ \end{pmatrix}$$

$$x^2 - 25 = (x+5)(x-5)$$

$$9y^2 - 81x^2 = (3y+9)(3y-9)$$

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1. $3x^5 - 6x$
 $3x(x^4 - 2)$

2. $x^2 + 8x + 15$
 $(x + 5)(x + 3)$

3. $x^2 - 10x + 21$
 $(x - 7)(x - 3)$

4. $25t^2 - 16$
 $(5t + 4)(5t - 4)$

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5. $x^2 - x - 42$
 $(x - 7)(x + 6)$

6. $-3x^2 + 14x - 8$
 $- (3x^2 - 14x + 8)$
 $- (3x - 2)(x - 4)$

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7. $2x^2 + 17x + 21$
 $(2x + 3)(x + 7)$

$$\frac{4(25x^2 - y^2)}{4(5x+y)(5x-y)}$$

8. $100x^2 - 4y^2$
 $(10x + 2y)(10x - 2y)$

9. $4x^2 - 15x - 4$
 $(4x + 1)(x - 4)$

10. $6x^2 + x - 35$
 $(3x - 7)(2x + 5)$

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11. $8x^4 + 4x^3 - 2x^2$

$$2x^2(4x^2 + 2x - 1)$$

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

$$5 \overline{) 65} \begin{matrix} 13 \\ -5 \\ \hline 15 \end{matrix}$$

12. $15x^3 + 65x^2 - 50x$

$$5x(3x^2 + 13x - 10)$$

$$5x(3x - 2)(x + 5)$$

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Assignment:

Factoring Worksheet

$$\phantom{()} \phantom{()}$$

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