

**Do Now:**

Factor the following completely

1.  $x^3 - 49x$

$$x(x^2 - 49)$$

$$x(x-7)(x+7)$$

2.  $3x^2 - 3x - 216$

$$3(x^2 - x - 72)$$

$$3(x-9)(x+8)$$

$$\begin{array}{r|l} -72 & \cdot 1 \\ \hline -9 \cdot 8 & \end{array}$$

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- 1) C      2) B

**Homework Answers**

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

4)  $x(x + 6)(x - 6)$

5)  $9(c + d)(c - d)$

6)  $2(y + 9)(y + 1)$

7)  $m(m + 8)(m - 2)$

8)  $x(y - 3)(y - 2)$

9)  $2(6 + y)(6 - y)$

10)  $(x^2 + 7)(x - 1)(x + 1)$

WORK SHOWN:  $x^4 + 6x^2 - 7, (x^2 + 7)(x^2 - 1), (x^2 + 7)(x - 1)(x + 1)$

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## Reviewing AC Factoring

Steps: CHECK FOR GCF FIRST

- 1) Multiply the "a" and "c" terms
- 2) Find two numbers that multiply to step 1 and add to the "b" term
- 3) Split the middle term based on the numbers found in step 2

Continue on as you did when you factored by grouping

- 4) Factor out gcf of first two terms
- 5) Factor out gcf of last two terms
- 6) Factor out common parenthesis

$$1) 2x^2 + 13x + 6$$

$$(2x^2 + 12x)(+1x + 6)$$

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

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

$$a=2 \quad b=13 \quad c=6$$

$$AC=12 \quad B=13$$

12 · 1	12 + 1
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2)  $8n^2 - 16n + 6$

$$2(4n^2 - 8n + 3)$$

$$2(4n^2 - 6n - 2n + 3)$$

$$2(2n)(2n-3) - 1(2n-3)$$

$$2(2n-1)(2n-3)$$

$$a=4 \quad b=-8 \quad c=3$$

12	-8
-6 · -2	-6 + -2

3)  $-3k^2 - k + 2$

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

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

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

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

$$3k^2 - 2k + 3k - 2$$

-6	1
3 · -2	3 + -2

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