

$$x^3 + 27$$

$$(x+3)$$

$$(x^2 - 3x + 9)$$

$$125x^3 - 27$$

Sort: Factoring

Difference or Sum of Cubes

Cubics and Quartics

$$64x^3 + 27$$

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

$$x^4 + 10x^2 + 9$$

$$4x^4 - 6x^2 + 2$$

$$x^4 - 8x^2 + 15$$

$$(x-4)$$

$$(16x^2 - 12x + 9)$$

$$2x^3 - 5x - 12x$$

$$(x^2 + 9)$$

$$(x-1)$$

Table of Content

Instructions	2
Sort	
Problems	3
Factors	4
Student Answer Sheet	5
Answer Key	6

Instructions

Directions for teacher:

- Print the 2 sort pages.
- I recommend printing the pages on different colored paper. This makes it easier for students to identify the problems, since the first page contains the problems and the 2nd page contains the factors.
- Cut out the rectangles and laminate for protection

Directions for students

- Pick a card. Use the methods learned in class to factor the problem, and then look for the factors on the cards.
- When finished, write your answers on the student answer sheet.

Possible Uses

- Review task for test
- ISS piece
 - Give to class after lesson to check understanding before assigning homework
 - You now have time to work individually with struggling students

$$x^4 - 8x^2 + 15$$

$$x^3 + 27$$

$$4x^4 - 6x^2 + 2$$

$$x^4 - 16$$

$$x^4 + 10x^2 + 9$$

$$x^3 - 125$$

$$x^4 + 7x^2 - 18$$

$$2x^3 - 5x^2 - 12x$$

$$x^4 - 2x^2 - 24$$

$$125x^3 - 27$$

$$64x^3 + 27$$

$(x-4)$	$(2x+3)$	x	2
$(x-1)$	$(x+1)$	$(2x^2-1)$	
(x^2+9)	(x^2+4)	$(x+2)$	
$(x-2)$	$(4x+3)$	$(5x-3)$	
$(x+3)$	(x^2+1)	$(x-5)$	
(x^2-3)	(x^2-5)	(x^2+9)	
$(16x^2-12x+9)$		(x^2+4)	
$(25x^2+15x+9)$		(x^2-6)	
$(x^2+5x+25)$		(x^2-2)	
(x^2-3x+9)			

Write down the problems and the factors for each problem.

1.	7.
2.	8.
3.	9.
4.	10.
5.	11.
6.	

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$$x^4 - 8x^2 + 15 = (x^2 - 5)(x^2 - 3)$$

$$x^3 + 27 = (x + 3)(x^2 - 3x + 9)$$

$$x^4 + 10x^2 + 9 = (x^2 + 1)(x^2 + 9)$$

$$x^4 + 7x^2 - 18 = (x^2 + 9)(x^2 - 2)$$

$$x^3 - 125 = (x - 5)(x^2 + 5x + 25)$$

$$125x^3 - 27 = (5x - 3)(25x^2 + 15x + 9)$$

$$x^4 - 2x^2 - 24 = (x^2 - 6)(x^2 + 4)$$

$$64x^3 + 27 = (4x + 3)(16x^2 - 12x + 9)$$

$$x^4 - 16 = (x - 2)(x + 2)(x^2 + 4)$$

$$4x^4 - 6x^2 + 2 = 2(2x^2 - 1)(x + 1)(x - 1)$$

$$2x^3 - 5x^2 - 12x = x(2x + 3)(x - 4)$$