

Name: \_\_\_\_\_

Show the work that justifies your answer.

Date: \_\_\_\_\_

CW # 4-3: Algebra 1 - Sections 10-5 & 10-6: Factoring

40 points

**Directions:** Factor each polynomial. Check your answer by distributing.

1.  $2x^2 + 12x - 80$

What is the greatest common factor?  
 $2$

Factor the trinomial into two binomials  
 (be sure to bring down the common factor)

Check your answer.

B	$10x$
L	$-4x$
M	$6x \checkmark$

*Handwritten work:*  $2(x^2 + 6x - 40)$  with arrows showing factoring to  $2(x-4)(x+10)$ . A grid-in shows  $-40$  with factors  $1, -40, -1, 40, 2, -20, -2, 20, 4, -10, -4, 10, 5, -8, -5, 8$ . The pair  $-4, 10$  is circled.

2. (Cross Ans check)

$2x^2 - 3x - 14$

Factor the expression in ( ) using diff of 2 perfect squares

B	$4x$
L	$-7x$
M	$-3x$

*Handwritten work:* Shows a cross-check for  $2$  and a grid-in for  $2$ . The trinomial is factored as  $(2x-7)(x+2)$ . A grid-in shows  $-14$  with factors  $1, -14, -1, 14, 2, -7, -2, 7$ . The pair  $2, -7$  is circled.

3.  $8x^2 - 18$

Pull the common factor from the two terms.

Factor the expression in ( ) using diff of 2 perfect squares

B	$-6x$
L	$6x$
M	$0x \checkmark$

*Handwritten work:* Shows factoring  $2(4x^2 - 9)$  to  $2(2x+3)(2x-3)$ . A grid-in shows  $2$ . A note says to factor the expression in ( ) using diff of 2 perfect squares, with a grid-in showing  $(4x^2 + 0x - 9)$ .

4.  $16x^2y^7 - 20x^5y^5 + 8x^4y^3z^2$

What is the greatest common factor?

$4x^2y^3$

*Handwritten work:* The polynomial is factored as  $4x^2y^3(4y^4 - 5x^3y^2 + 2x^2z^2)$ . The GCF  $4x^2y^3$  is written in purple.

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CW # 4-3: Algebra 1 - Sections 10-5 & 10-6: Factoring

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**Directions:** Factor each polynomial. Check your answer by distributing.

5.  $(x^3 - x^2) - (4x + 4)$

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

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

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

Group terms in pairs.

Find common factor for each group.

Parentheses should be same.

Parentheses are now the common factor

Diff of 2 Perfect Squares.

6.  $5x^2 - 60x - 140$

$5(x^2 - 12x - 28)$

$5(x+2)(x-14)$

-28	
1	-28
-1	28
2	-14
-2	14
4	-7
-4	7

What is the greatest common factor?

5

Factor the trinomial into two binomials

(be sure to bring down the common factor)

Check your answer.

B	-14x
L	2x
M	-12x ✓

(Perfect Square Trinomial)

7.

4	
1	4
2	2

$4x^2 + 12xy + 9y^2$

$4x^2 + 12xy + 9y^2$

$(2x+3y)(2x+3y)$

or  $(2x+3y)^2$

9	
1	9
3	3

B	6xy
L	6xy
M	12xy ✓