

# 5 Classwork 5 MAT 1275 Professor Chiu

Name: Sol

1. Factor the GCF for the following:  $8a^2b - 16ab^3 + 12a^2b^2$

• Coefficient

$$= \underline{4ab} (2a \cdot 1 - 4 \cdot 1 \cdot b^2 + 3ab)$$

8	16	12
1x8	1x16	1x12
2x4	2x8	2x6
	4x4	3x4

greatest common divisor

• "a" part

$a^2, a, a^2$

$\Rightarrow$  common factor = a

• "b" part

$b, b^3, b^2$

$\Rightarrow$  common factor = b

1, 2, 4, 8    1, 2, 4, 8, 16    1, 2, 3, 4, 6, 12

2. Factor the GCF for the following:  $-5(2x+7) + 3x(2x+7)$

• We see  $(2x+7)$  showing up in both parts:

$$= (2x+7)(-5+3x)$$

$\Rightarrow (2x+7)$  is the GCF

$$= 4ab(2a - 4b^2 + 3ab)$$

and

**GCF is 4ab**

3. Factor by grouping:  $6x^2 - 2x + 9x - 3$

• observe the coefficients:

6	-2	9	-3
2x3	2x(-1)	3x3	3x(-1)

$\Rightarrow$  We have a

"3, -1, 3, -1"

pattern

$$\Rightarrow (6x^2 - 2x) + (9x - 3)$$

grouping first two together and second two together

$$= (6x^2 - 2x) + (9x - 3)$$

$$= 2x(3x - 1) + 3(3x - 1)$$

$$= (3x - 1)(2x + 3)$$

