MAC 1105 Section 1A27 **Name:**

Quiz 1A (Modules 1,2)

Be sure to show your work for full credit!

1. List the elements of S that belong in the following sets.

$$S = \{6^0, \sqrt{49}, \sqrt{7}, 0, 5.7612, 3.1\overline{12}, -5, \pi\}$$

Whole Numbers = { 6^0, $\sqrt{49}$, 0 } $6^0 = 1$

Rational Numbers = { 6^0, $\sqrt{49}$, 0, 5.7612, $3.1\overline{12}$, -5 } $\sqrt{49} = 7$

Irrational Numbers = { $\sqrt{7}$, π }

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2. Identify the property illustrated in the statement. Assume the variable represents a real number.

a) $16 + (2y + 6z) = (16 + 2y) + 6z$ Associative Property

b) $16 + (2y + 6z) = (2y + 6z) + 16$ Commutative Property

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3. Factor the polynomial.

$$25x^2 - 16y^6$$

$$= 5^2 \cdot x^2 - 4^2 (y^3)^2$$

$$= (5x)^2 - (4y^3)^2$$

$$= (5x - 4y^3)(5x + 4y^3)$$

Continue onto the back.

4. Factor the polynomial by grouping.

$6x^2 - 7x + 2$

Both factors signs match
Both factors are negative

$2 \cdot 6 = 12$	Factors of 12	Sum to -7
	$-1, -12$	x
	$-2, -6$	x
	$-3, -4$	✓

$6x^2 - 7x + 2$

$= 6x^2 - 3x - 4x + 2$

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

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