INSTRUCTOR GUIDANCE EXAMPLE: Week One Discussion

1. I will use the following five vocabulary words in my discussion demonstrating my understanding of their meaning as relating to the math work.

- **exponent**
- **integer**
- **variable**
- **lowest terms**
- **divisor**

2. I will be using my sister's birth date for this exercise, and it is 21 October 1961. This means I have the following **integers** to work with:

Let a = 10
b = –21 (notice I made the day number negative)
c = 61

I will be using the algebraic expressions in A – C given in the assignment for parts 3 – 5 of the discussion.

A) $a^3 - b^3$	This is the given expression with **variable**s a and b and **exponent**s of 3 on each of them
$10^3 - (-21)^3$	I have plugged in 10 for **variable** a and -21 for **variable** b.
1000 – (-9261)	The **integer**s were raised to the given **exponent**s.
1000 + 9261	Minus a negative becomes a plus.
10,261	Here is the final answer.

B) $(a - b)(a^2 + ab + b^2)$	This is the given express which also uses variables a and b.
$[10 - (-21)][10^2 + 10(-21) + (-21)^2]$	I have plugged in 10 for a and -21 for b in each case.
$[10 + 21][100 + (-210) + 441]$	In the first part the two negatives became a plus, and in the second part the squaring and the multiplication was done.
$31(100 - 210 + 441)$	The first addition was done and the signs were simplified.
$31(331)$	The second quantity was simplified.
10,261	Here is the final answer.

C) $\frac{b - c}{2b - a}$	This expression uses all three **variable**s: a, b, and c. It is a rational expression with a **divisor** of 2b – a.
$\frac{-21 - 61}{2(-21) - 10}$	The **integers** have been plugged in for the **variables**.
$\frac{-82}{-52}$	Both numerator and denominator have been evaluated. Both are negative which means the answer will be positive.
$\frac{41}{26}$	This is our answer in **lowest terms**, and I will leave the answer as an improper fraction.

6. [Student answers will vary on this question depending upon math background and memory.]