Find the value of each expression.

1. $5 + 2(6 - 3) + 5$

2. $5 + 2(6 - 3 + 5)$

3. What are the similarities and differences in the two problems above?

4. $20 - 4 \cdot 5$

5. $3 + 10(20 - 2^3)$

6. $\dfrac{12 + 2^2}{15 - 9 + 2}$

Thinking Ahead about Exponents – You should understand these questions fully before the next class. Check your answers with the key on your instructor's website.   You can get help with this work from the following sources:

- p. 3 of your textbook
- Visit your instructor during office hours
- Go to the Algebra Alcove

7. Write each term in the appropriate blank: **factor, exponent, base, multiplication**

In the expression, 5^3, the 5 is called the _____ and the 3 is called the

_____. This notation is represents repeated _____

of the same _____.

8. Rewrite the following using exponents:	9. Write as the product of factors:
a. $7 \cdot 7 \cdot 7 \cdot 7$	a. 8^3
b. $y \cdot y \cdot y \cdot x \cdot x$	b. w^5
c. $(x + 3)(x+3)$	c. $(y - 2)^3$

10. Find the value of each expression. Hint: Many calculators and computer programs use the carat, "^" symbol for an exponent. To enter 5^3 into a graphing calculator, type "5^3".

$10^1 = $ _____ $10^2 = $ _____ $10^3 = $ _____

$10^4 = $ _____ $10^6 = $ _____ $10^9 = $ _____

11. Look for a pattern in the numbers above. What is the relationship between the power of 10 and its value?

12. Based on this pattern, predict the value of 10^{12} without using a calculator.

13. Based on this pattern, predict the value of 10^0 without using a calculator.