8. Complete the following assignment prior to Meeting #~~##~~ 15

   A. Study our notes from Meeting #14.

   B. Comprehend Jim's sample response to Quiz 14.

   C*. Express (in simplified form) the coefficient of x^2y^3 in the expansion of $(2x + 3y)^5$. Please display the computations in a pdf document uploaded to the appropriate Canvas assignment link.

   D*. Express (in simplified form) the following; display the computations in a pdf document uploaded to the appropriate Canvas assignment link:

   $$\binom{n}{0} + \binom{n}{1} + \binom{n}{2} + \binom{n}{3} + \ldots + \binom{n}{n}$$

   E. From the Video Page of *Canvas*, view with comprehension "binomial theorem."

   F. Comprehend Jim's sample responses to the homework prompts that are posted on *Canvas*.

C) $(a+b)^n \rightarrow \binom{n}{i} \rightarrow \binom{5}{3}$

binary
Combine coeff. and other part

$x^2 = (2x)^2 \rightarrow 4x^2$ $\qquad$ $4x^2 \cdot 27y^3 \rightarrow (4 \cdot 27)(x^2 y^3)$ $\qquad$ $\boxed{\binom{5}{3}(4 \cdot 27) = 1080}$

$y^3 = (3y)^3 \rightarrow 27y^3$

D)

$$1 = 1 = 2^0$$
$$1 + 1 = 2 = 2^1$$
$$1 + 2 + 1 = 4 = 2^2$$
$$1 + 3 + 3 + 1 = 8 = 2^3$$
$$1 + 4 + 6 + 4 + 1 = 16 = 2^4$$

From this pattern, we can see that

$$\binom{n}{0} + \binom{n}{1} + \ldots + \binom{n}{n} = 2^n$$