

Modeling with Linear Equations

Section 1.3
College Algebra, MATH 171
Mr. Keltner

Problem-Solving Strategies

- It seems like everyone who's anyone has a problem-solving strategy to help with word problems.
- Truly, there are just guidelines to help out:
 - *Identify what the problem wants (what is it asking for?)*
 - *Identify variables and if a formula will fit the situation.*
 - *Solve for the variable or value the question asks for.*
 - *Check your solution to see that it is reasonable.*

Example 1: Using a Formula

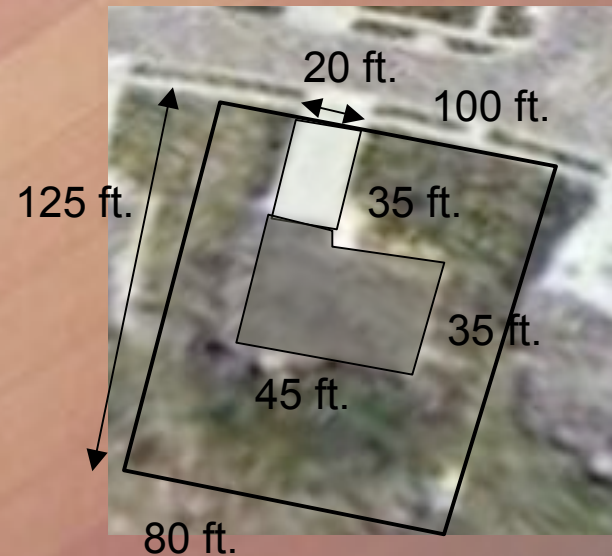
- Suppose you put a tax refund directly into a savings account and (miraculously) leave it in the account for one year, earning 4% interest. If, after a year of earning simple interest according to the formula

$$B = P + Prt,$$

the balance in the account is \$4368, what was the amount that you started with one year ago?

Example 2: Using *Formulas* to solve

- My house sits on a lot like the figure shown. Help me find the amount of square feet in my yard so I can lay down fertilizer so my yard doesn't die over the winter.
- I need to buy enough fertilizer to cover how many square feet of yard?



Example 3: Funky Numbers

One-half of the difference of a number and six is equal to two-fifths plus three-fourths of the number.

Example 4: Relating two values

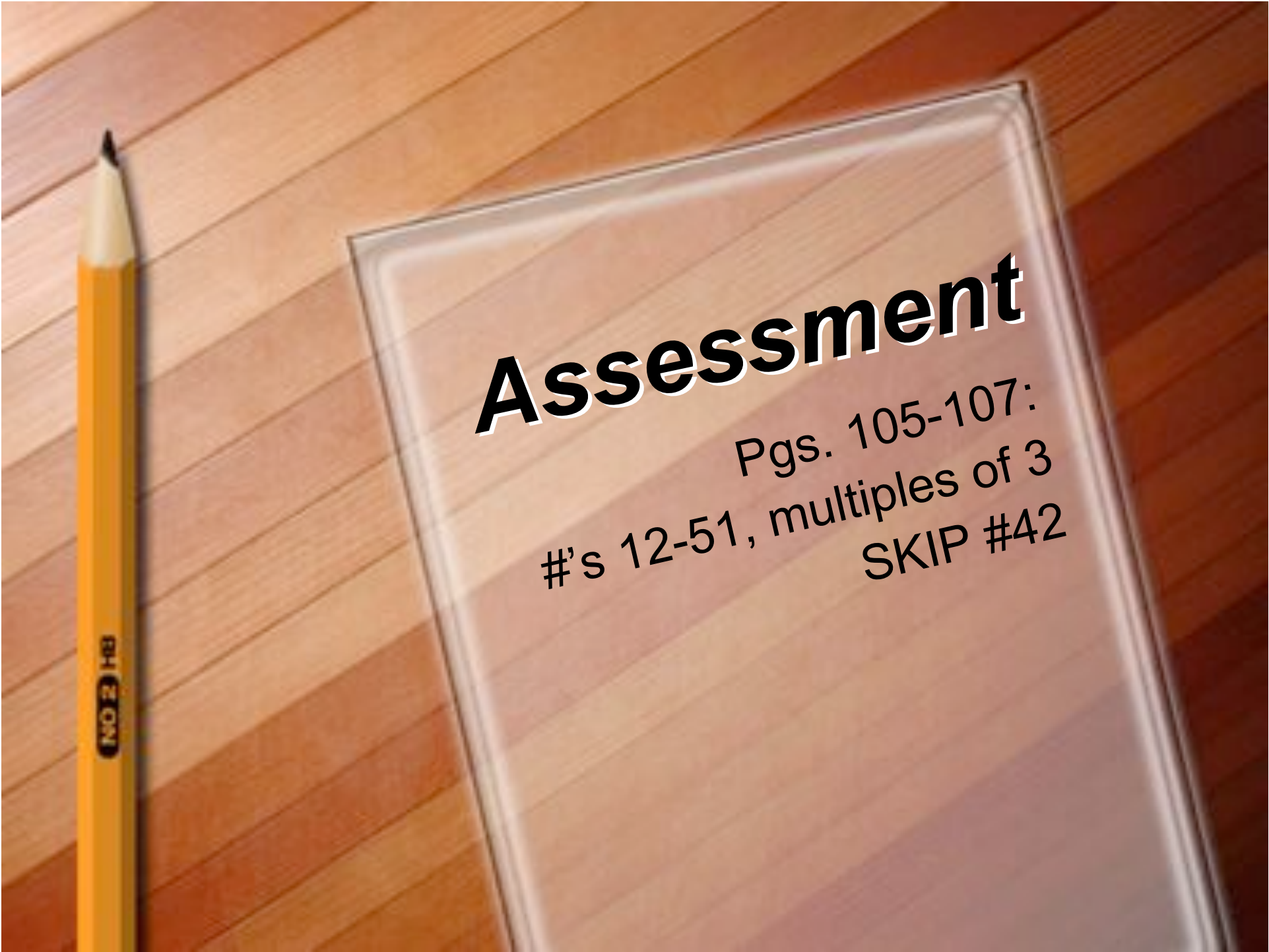
- It can help sometimes to express one value as it is related to another value.
- Example: One positive number is one-fourth of another number. The sum of the two numbers is 31. What are the two numbers?

Example 5: Consecutive Integers

- *Integers* are the positive and negative whole numbers, including zero.
- Example: The sum of three consecutive even integers is 102. What are the integers?

Common Formulas

- A list of common formulas for area, perimeter, circumference, and other various formulas are on page 103 of your book.
- On tests, you will be told which formulas need to be memorized, but for the most part, these should be common sense to you at this point.
 - Except for the Celsius to Fahrenheit one, but that's just evidence that Canada sucks.
 - Look at an example of how to convert on your calculator using the SciTools app.



Assessment

Pgs. 105-107:
#’s 12-51, multiples of 3
SKIP #42