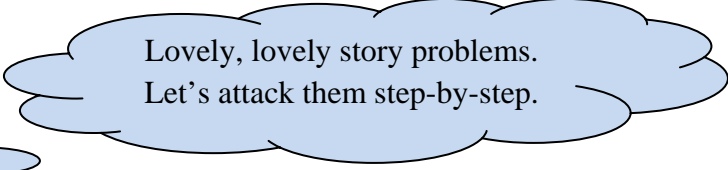


Elementary algebra
Class notes
Story Problems Are My Friends (section 2.4)

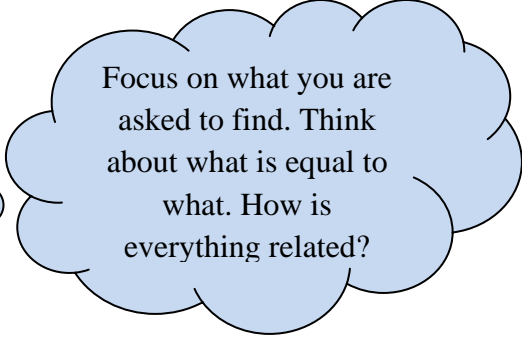


Lovely, lovely story problems.
Let's attack them step-by-step.

Plan of Attack:

It helps to approach story problems step-by-step. Here are the general steps I use.

Read the problem twice,
define your variable – usually works to
let x represent what you want to find,
construct a drawing if relevant,
try out some numbers in the setup to get an
idea of what you are looking for,
create a verbal model with words to show what's equal,
translate to an equation and solve it,
check not only in the equation but also in the problem wording,
celebrate!



Focus on what you are
asked to find. Think
about what is equal to
what. How is
everything related?

Worksheet: Story Problem Pieces:

This worksheet works on starting story problems by defining variables and using those variables to express the parts of a story problem. Solutions are available online.

expl 1: Write expressions for the following phrases. Let x represent the unknown number.

- a.) the difference of a number and 4

- b.) five times the difference of a number and 4

- c.) the sum of a number and four times the number

- d.) the sum of a number and four, times the number

- e.) twice a number added to three

expl 2: Write as an equation and solve. Let x represent the unknown number.

The difference of a number and 4 is equal to twice the number added to three. Find the number.

expl 3: Russia has 4066 more TV stations than China. The total number of TV stations in both countries is 10,546. How many TV stations does each country have?

Let x = number of TV stations in China.
Write it down!

Use x to express the number of stations in Russia.

A verbal model may help:

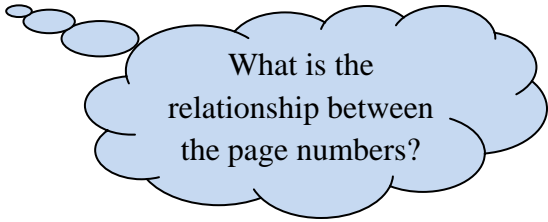
# in China	+	# in Russia	=	Total #
------------	---	-------------	---	---------

expl 4: Let x represent an integer. Express, using x , the next two consecutive integers. Then write an expression for the sum of the second and third integers.

Integers:
{... -3, -2, -1, 0, 1, 2, 3, ...}

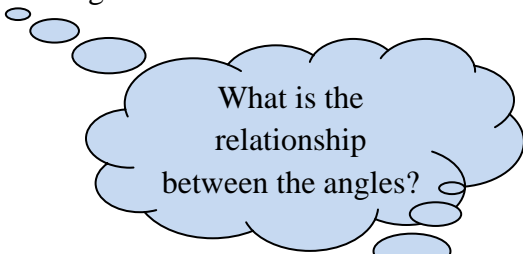
Write down three consecutive integers as an example.

expl 5: I have my favorite book, *To Our Scattered Bodies Go*, open to where I left off reading. The page numbers showing add to 137. If I was reading the right page, what page number am I on?

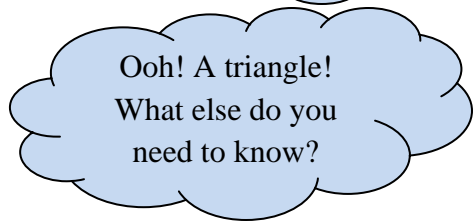


What is the relationship between the page numbers?

expl 6: A triangle has angle measures that are consecutive even integers. Find the measure of each angle.

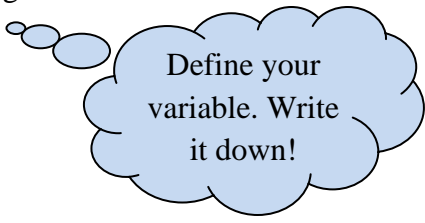


What is the relationship between the angles?



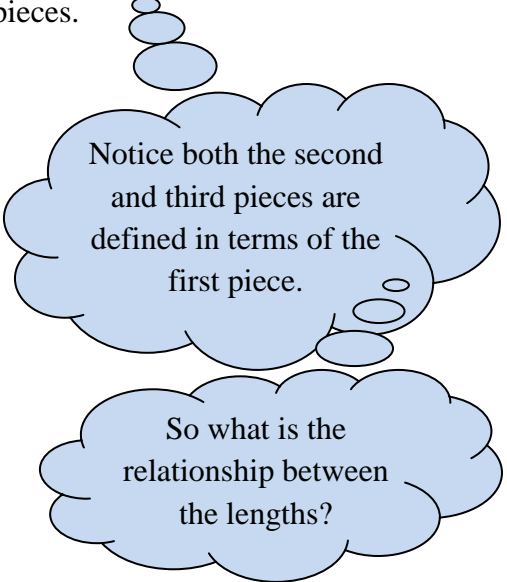
Ooh! A triangle!
What else do you need to know?

expl 7: The Pentagon is the world's largest office building. It has 3 times the amount of floor space as the Empire State Building. If the total floor space of the two buildings is approximately 8700 thousand square feet, find the floor space in each building.



Define your variable. Write it down!

expl 8: A thirty foot piece of siding is cut into three pieces. The second piece is four times as long as the first piece and the third piece is five times as long as the first piece. Let x represent the length of the first piece and find the lengths of all of the pieces.



Notice both the second and third pieces are defined in terms of the first piece.

So what is the relationship between the lengths?

It is never a waste of time to write down what you are letting x represent. Write it down specifically! A verbal model helps form the equation by writing it in words first. Make sure you label your answer with the appropriate units (feet, miles, etc.). Check your answer by rereading the problem.