# 1.3 Models & Applications

### **GOALS:**

- 1. Translate word problems to algebra.
- 2. Solve word problems using a systematic approach.
- 3. For equations with more than one variable, solve for one of the variables in terms of the other.

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Study 1.3 CVC 1-7 # 1- 11;
15, 19, 23, ... 43; 49, 53, 57..., 69
```

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# 1.3 Models & Applications

### Problem:

Statistics indicate that, in your life:

You will devote 32 years to sleeping and eating.

The number of years sleeping will exceed the number of years eating by 24.

How many years will you spend sleeping? How many years eating?

How do we solve such problems?

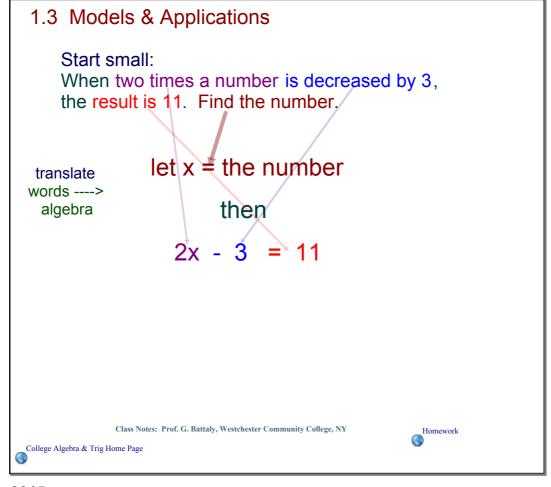
Need to translate words ----> algebra use algebra ---> solution

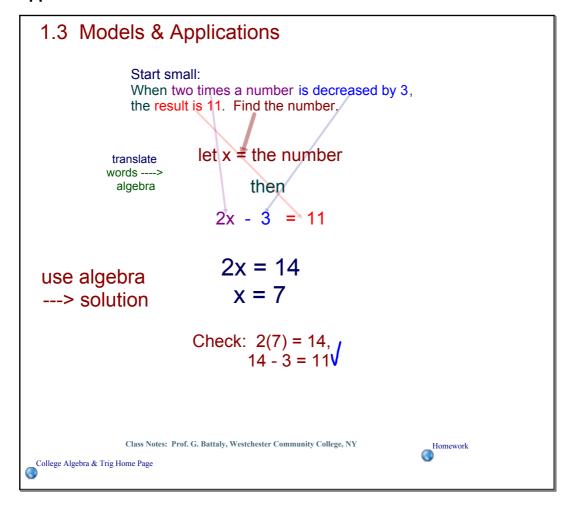
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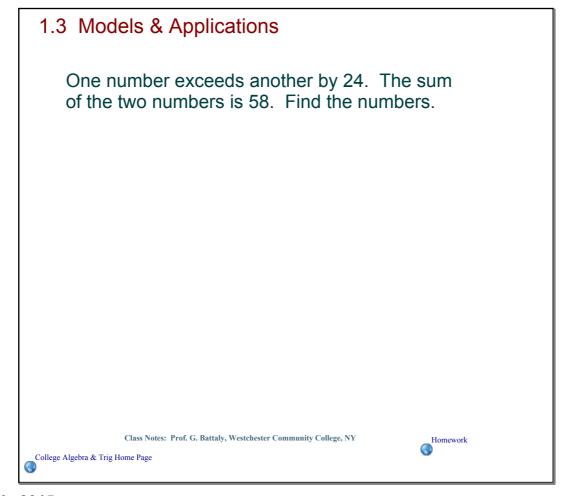
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Homework

# Start small: When two times a number is decreased by 3, the result is 11. Find the number. Class Notes: Prof. G. Battaly, Westchester Community College, NY College Algebra & Trig Home Page







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One number exceeds another by 24. The sum of the two numbers is 58. Find the numbers.

let x =the 2nd number

then x + 24 = 1st number

$$x + (x + 24) = 58$$

solve:

$$2x + 24 = 58$$

$$2x = 34$$

$$x = 17 2nd #$$

$$x + 24 = 41 1st #$$

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### Homework

# 1.3 Models & Applications

Problem:

Statistics indicate that, in your life: You will devote 32 years to sleeping and eating.

The number of years sleeping will exceed the number of years eating by 24. How many years will you spend sleeping? How many years eating?

### How to Do Word Problems:

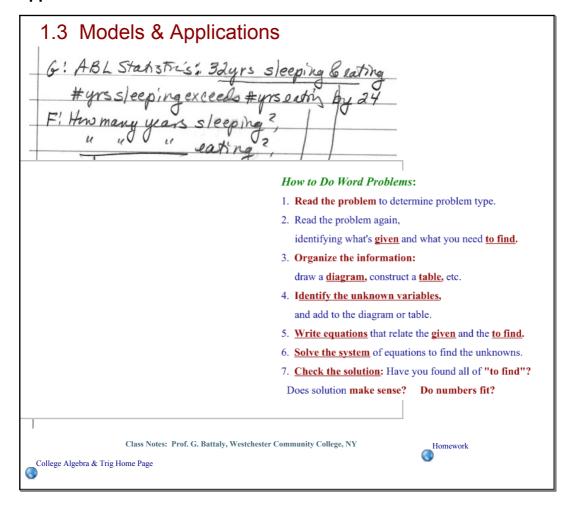
- 1. Read the problem to determine problem type
- Read the problem again, identifying what's given and what you need to
- 3. Organize the information:
  draw a diagram, construct a table, etc.
- Identify the unknown variables, and add to the diagram or table.
- 5. Write equations that relate the given and the
- 6. Solve the system of equations to find the unk
- 7. Check the solution: Have you found all of "

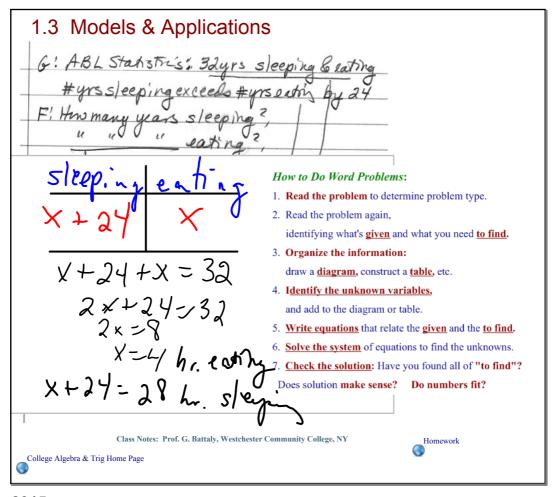
Does solution make sense? Do numbers fit

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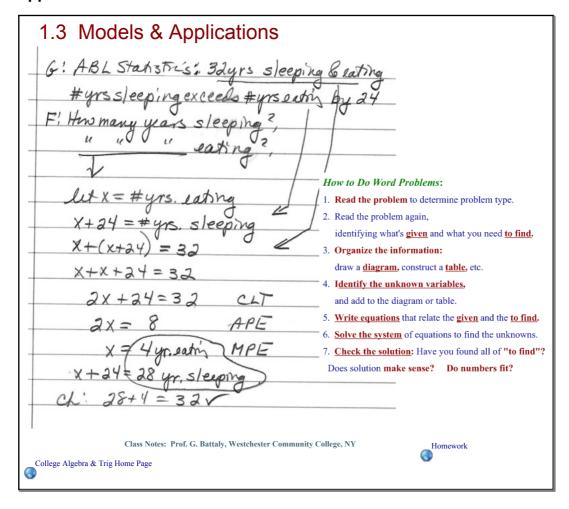
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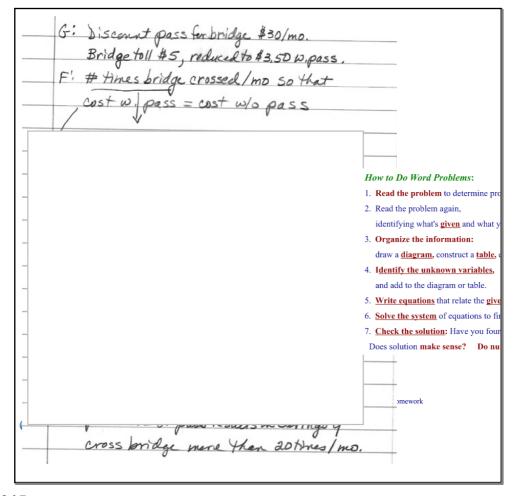
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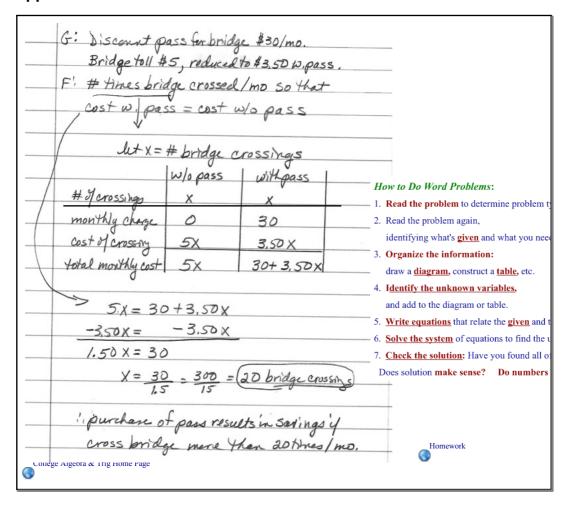


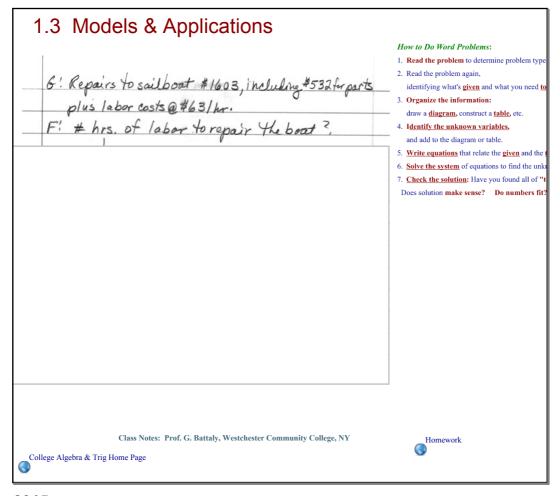
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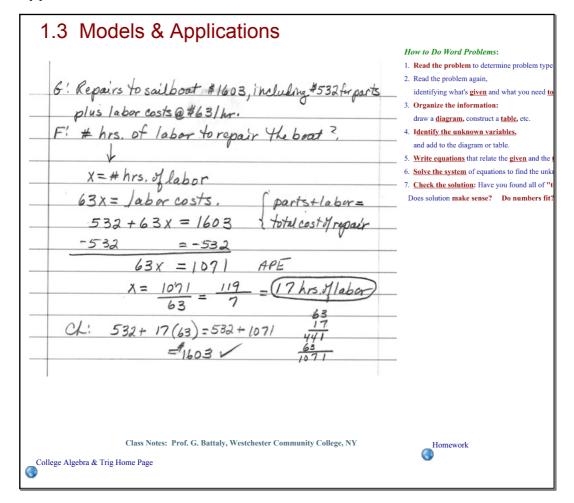


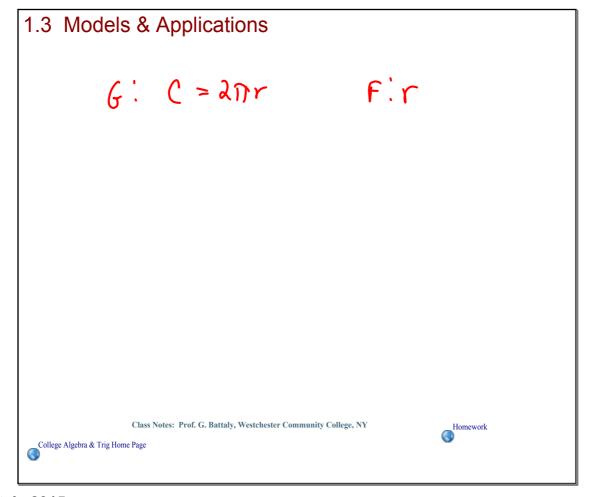
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$$\frac{2\pi}{2\pi} = \frac{C}{2\pi}$$

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Homework

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