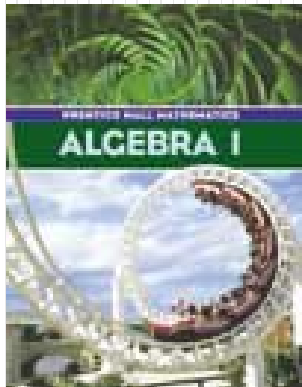




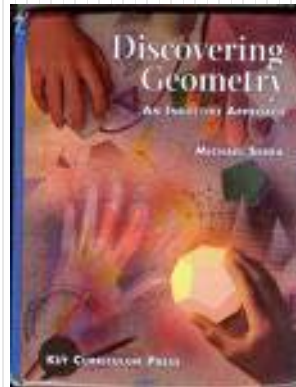
Mr. Northcutt's Math Classes Class Presentation



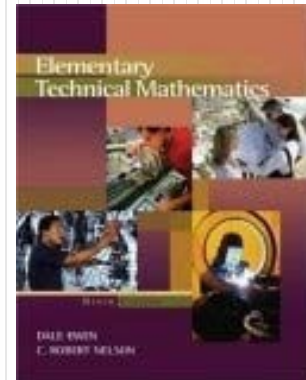
December 1, 2008 (59)



Math 1



Math 2



Applied Math



Math 1 – Daily Summary

- **Announcements**
 - **QUIZ: Sections 8-1 thru 8-3 on Friday**
- **Class Objectives**
 - Review Definition of Powers (w/ positive exponents)
 - Zero and Negative Exponents
- **Assignment**
 - **Lesson 8-1: 2-44 EVEN, 45, 81-86**




Review: Definition of a Power

- Recall the definition of a Power...

$$x^n = \underbrace{x \cdot x \cdot \dots \cdot x}_{n \text{ times}}$$

- **x** is called the **Base**
 - **n** is called the **Exponent**
- A power is only shorthand for MULTIPLICATION!

$$2^3 \quad (-3)^2 \quad -4^2$$




0 and Negative Exponents

- Consider the sequence below...do you see a pattern?

$$2^3 \quad 2^2 \quad 2^1 \quad 2^0 \quad 2^{-1} \quad 2^{-2}$$

$$8 \quad 4 \quad 2 \quad ? \quad ? \quad ?$$



Simplifying a Power

- **Simplify the following expressions...**

$$3^{-4}$$

$$(-6)^0$$

$$-4^0$$

$$-3^{-2}$$

“Simplest Form” – With Exponents



- An Expression is in Simplest Form when it is written with Only Positive Exponents.
- Write the following expressions in Simplest Form...

$$3ab^{-2}$$

$$\frac{1}{x^{-3}}$$

$$\frac{t^{-2}}{s^{-3}}$$



Evaluating Expressions

- Evaluate when $r = -3$ and $s = 5$.

$$3s^{-2}$$

$$r^{-4}s^2$$



“Applied” Example (Exponents)

- **Suppose the number of HW problems Mr. Northcutt assigns doubles each week. If he assigned 8 problems this week, how many would he assign 4 weeks later?**

- **How might you find out how many he assigned 2 weeks ago?**



Math 2 – Daily Summary

- **Announcements**
 - **QUIZ: Sections 6-1 thru 6-2 plus Polynomials on Friday**
- **Class Objectives**
 - Review Tests
 - Focus on Add/Subtracting Polynomials
 - Continue Origami – Cube
 - Hang from ceiling when completed
- **Assignment**
 - **Worksheet: Adding & Subtracting Polynomials**

Applied Math – Daily Summary



- **Announcements**

- Bridge Building Project This Week!

- **Class Objectives**

- Review Bridge Building Guidelines
- Sketch Design of Bridge
 - Agree on structure with partner
 - Verify that you will have enough popsicle sticks

- **Assignment**

- Continue Work on Bridge



Bridge Building Teams

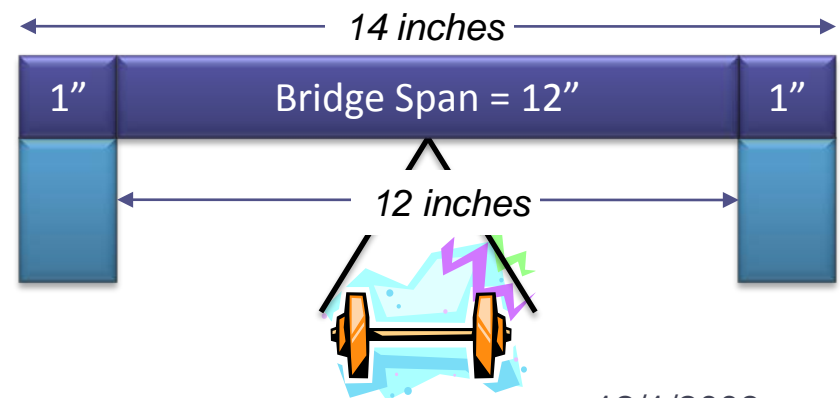
1. **Tucker & Conner**
2. **Ellie & Cecilly**
3. **Kyle & Mitchell**
4. **Sam & Augusta**
5. **Matt & Danielle**
6. **Justin & Mike**



Bridge Guidelines

- **Minimum Requirements**

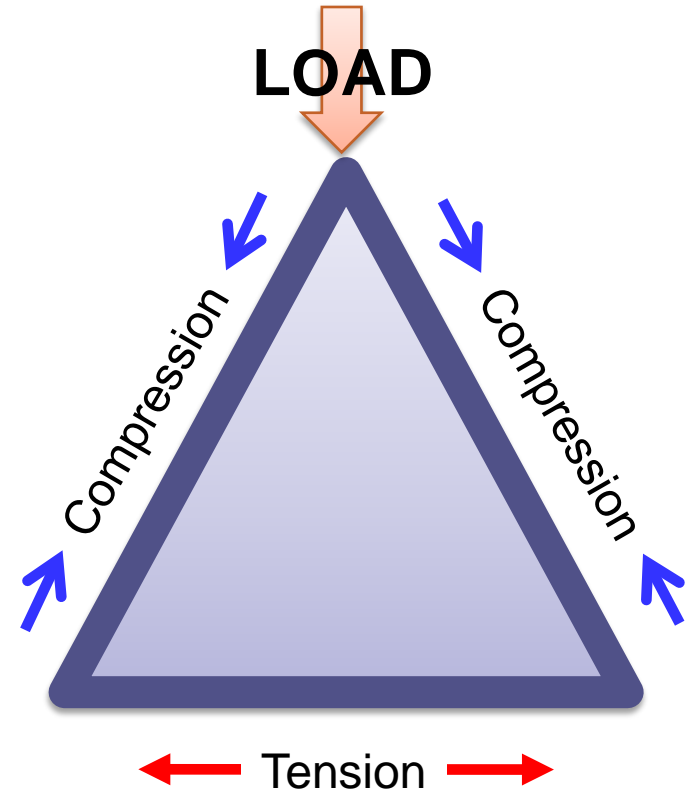
- Only use popsicle sticks and glue
- Minimum of a 12 inch span. Must include at least 1 inch on either end to support the bridge.
- Minimum of 1 inch width.
- Maximum of 100 popsicle sticks
- No cutting or breaking of popsicle sticks
- Weight will be hung from the CENTER OF THE BRIDGE ON DECK (where car would be).





The Physics/Math of Bridges

- A Bridge can be simplified/approximated as a Triangle...
- 2 Key Forces at Work:
 - **Compression**
 - Breaks due to “buckling”
 - **Tension**
 - Breaks at joints
- Consider this in your design!





Project Scoring Rubric

- **Documented Design (20%)**
 - Sketch of Bridge – What are your plans?
 - Rationale for Design – Why are you using the design?
 - Confirmation of Materials – Do you have enough?
- **Quality of Construction (30%)**
 - Assessment by teacher and peers
- **Use of Time During Class (30%)**
 - Assessment by teacher
- **Results (Efficiency) (20%)**
 - Results of Weight Test

$$\text{Efficiency} = \frac{\text{Total Load (kg)}}{\text{Bridge Weight (kg)}}$$