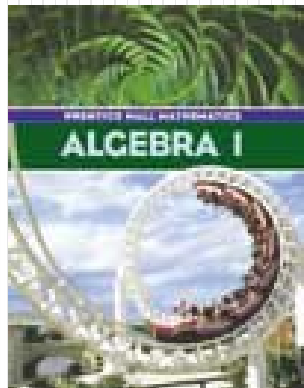




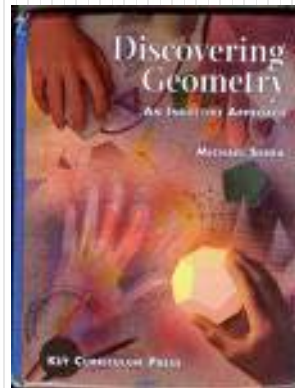
# Mr. Northcutt's Math Classes Class Presentation



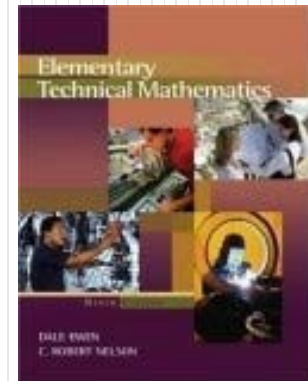
December 12, 2008 (67)



Math 1



Math 2



Applied Math



# Math 1 – Daily Summary

- **Announcements**

- **TEST: Sections 8-1 thru 8-5 MONDAY!**
  - Sample Test & Key Distributed in Class (and on Website)

- **Class Objectives**

- Review of Exponents
  - Work on Sample Test

- **Assignment**

- Sample Test (Solutions on Back Side)



# Review of Powers (Exponents)

- **Foundation of Exponents:**
  - Definition of a Power (Base & Exponent)
  - Power with a 0 Exponent
  - Power with a Negative Exponent
- **These all follow from above:**
  - Multiplication with Powers (same Base)
  - Power to a Power
  - Division with Powers



# Math 2 – Daily Summary

- **Announcements**

- None

- **Class Objectives**

- HW Questions before Quiz?
- **Quiz on 6-1 thru 6-3 (22 Points)**
  - HW Check after completing Quiz (6-1 thru 6-3)

- **Assignment**

- Past Due HW (Catch-Up)



# Applied Math – Daily Summary

- **Announcements**

- **Test: Chapter 7 – Ratio & Proportion on Tuesday**
  - **Sample Test on Website Now!!!**
- **Next Week: Project - Scale Drawings (Pick a Subject)**

- **Class Objectives**

- Inverse Variation
  - Pulley Systems, Gear Systems, Levers

- **Assignment**

- **Lesson 7.4: 9, 13, 14, 23, 28, 33, 34, 40**



# Inverse Variation

- When two quantities change in a way such that their **PRODUCT** is constant they are said to **VARY INVERSELY**.

$$x_1 y_1 = x_2 y_2 = x_3 y_3 = \text{constant}$$

or

$$\frac{y_1}{y_2} = \frac{x_2}{x_1}$$

Inverse Ratios

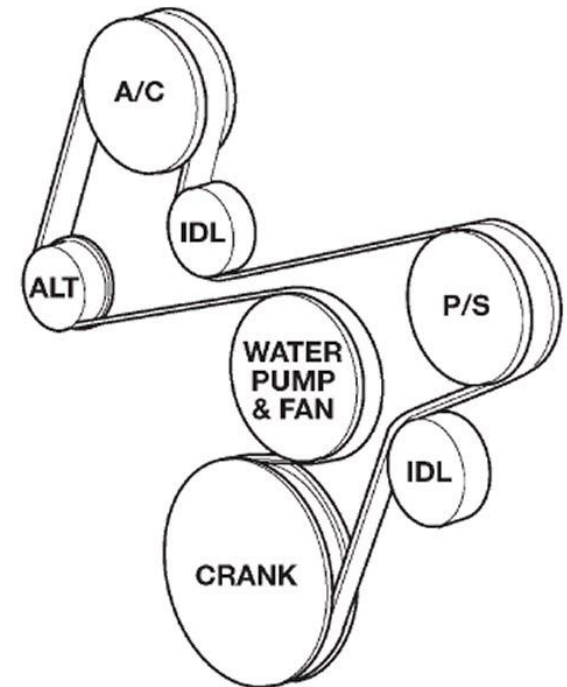


# Pulley Systems - Belts

- **Pulley Systems (i.e., Belts) apply Inverse Variation.**

$$(\text{diameter A})(\text{rpm A}) = (\text{diameter B})(\text{rpm B})$$

If the Crank pulley has a diameter of 8 in and rotates at 900 rpm, and the A/C must turn at 1200 rpm, what size diameter must the A/C pulley have?



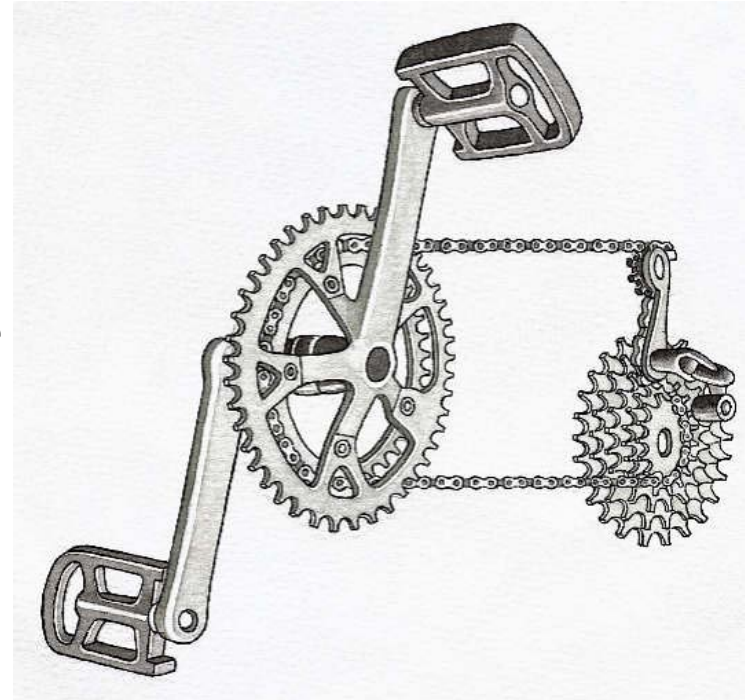


# Gear Systems

- **Gear Systems (i.e., Transmissions, Bikes) use Inverse Variation.**

$$(\#teeth\ A)(rpm\ A) = (\#teeth\ B)(rpm\ B)$$

If the front shifter is set in a gear with 44 teeth and rotates at 90 rpm, and the rear shifter is in a gear with 22 teeth, at what rpm is the rear tire spinning? If the bike tires are 26" in diameter, how fast is the bike moving in mph?







# Lever Systems (See-Saw)

- **Lever Systems (fulcrums, bars, etc.) use Inverse Variation.**

$$(\text{Force A})(\text{Distance A}) = (\text{Force B})(\text{Distance B})$$

A palette of wood weighing 1500 lbs must be lifted by two women with a fulcrum. The fulcrum is place 3 feet from the palette and the combined weight of the me is 300 lbs. How far must the men be from the fulcrum to lift the palette?

