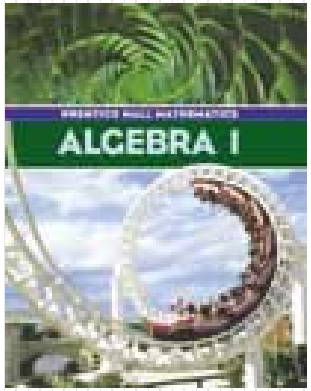
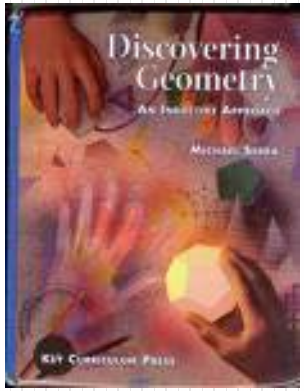
Mr. Northcutt's Math Classes
Class Presentation

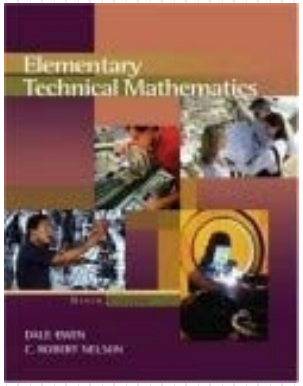
December 16, 2008 (69)



Math 1



Math 2



Applied Math

Math 1 – Daily Summary

- **Announcements**
  - QUIZ on Sections 9-1 & 9-2 on Friday
  - Origami on Monday & Tuesday next week
- **Class Objectives**
  - Definition of Polynomials
  - Adding & Subtracting Polynomials
- **Assignment**
  - **Lesson 9-1**: 2-40 EVEN, 41, 49-50

Polynomial Terminology

- **TERM: Single number or product of a number and one or more variables raised to a power.**
  - The terms in an ALGEBRAIC EXPRESSION are separated by plus (+) and minus (-) signs.
- **COEFFICIENT: The numerical factor of a term.**
- **DEGREE OF A TERM: The sum of the powers of the variables in a term.**

$2x^1$	$4x^1y^2$	$3x^1y^1$	6
Coefficient = 2 Degree = 1	Coefficient = 4 Degree = 3	Coefficient = 3 Degree = 2	Coefficient = 6 Degree = 0

Constant has Degree 0!

Naming Polynomials (by # of Terms)

- **Monomial:** Contains only one (1) term (product of a number and zero or more variables).
- **Binomial**: A polynomial with exactly two (2) terms.
- **Trinomial**: A polynomial with exactly three (3) terms.
- **Polynomial**: Monomial or sum/difference of unlike monomials (ALL above are also Polynomials).

$5xy^3 - 4$

binomial

$3x^2 + 2xy - 5$

trinomial

$4x$

monomial

$x^5 - 4x^3 + 3x^2 - 2x + 9$

polynomial

Degree of a Polynomial

- **Degree of Polynomial:** The degree of the highest degree monomial contained in the polynomial.

$6x^3 + 4y^2 - y^1 + 2$

Degree of Polynomial = 3

$3y^4 - 4y^2x^2z^1 - z^2 + 2x^1$

Degree of Polynomial = 5

- **Writing a Polynomial (STANDARD FORM)**
  1. Order terms from highest to lowest degree.
  2. If degree is the same, alphabetize by variable with highest degree.

$$-4x^2y^2z + 3y^4 - z^2 + 2x$$

Naming Polynomials (by Degree)

- **Linear:** Polynomial of degree 1.
- **Quadratic**: Polynomial of degree 2.
- **Cubic**: Polynomial of degree 3.
- **Fourth Degree**…: Polynomial of degree 4…

Polynomial	Degree (by Exponents)	Name by Degree	# of Terms (by +/-)	Name by Terms
$7x+4$		**Linear**		**Binomial**
$3x^2+2x+1$		**Quadratic**		**Trinomial**
$4x^3$		**Cubic**		**Monomial**
$9x^4+11x$		**Fourth Degree**		**Binomial**
5		**Constant**		**Monomial**

Adding and Subtracting Polynomials

- **It's Simple!** **Add/Subtract "Like Terms"**

- **It is useful to write the polynomials with like terms in same columns – like you do with "ordinary" numbers.**

$$(5x^2 + 6x - 8) + (4x^2 - 3)$$

$$\begin{array}{rrr} 5x^2 & +6x & -8 \\ +\ 4x^2 & & -3 \\ \hline 9x^2 & +6x & -11 \end{array}$$

Subtracting Polynomials

- **Be Careful with the subtraction (-) and Negative Signs!!!**

$$(5x^2 - 3x - 4) - (2x^2 - 5x + 6)$$

$$\begin{array}{rrr} 5x^2 & -3x & -4) \\ -(2x^2 & -5x & +6) \\ \hline 3x^2 & +2x & -10 \end{array}$$

Practice

- **Try adding/subtracting the following:**

$$(4x+2)+(3x-1)$$

$$(5x^2+8)+(3x^2+1)$$

$$(4x^2+2x+8)+(3x^2-x+1)$$

$$(2x+8)-(x+1)$$

$$(6x^2+2x+8)-(3x^2-x+1)$$

Math 2 – Daily Summary

- **Announcements**
  - TEST on Chapter 6 on Friday
  - Origami on Monday & Tuesday Next Week
- **Class Objectives**
  - Properties of Parallelograms
- **Assignment**
  - **Lesson 6.5**: 1-10, 16 (Must be Completed for Full Credit!)

HW Solutions (6-4)

1: 28

2: 60^o, 40^o

3: 65^o

4: 23

5: 129^o, 73^o

6: 35

7: 54^o, 72^o, 108^o, 72^o, 162^o, 18^o, 81^o, 49.5^o, 130.5^o, 49.5^o, 162^o, 99^o

8: (3,8)

9: (0,-8)

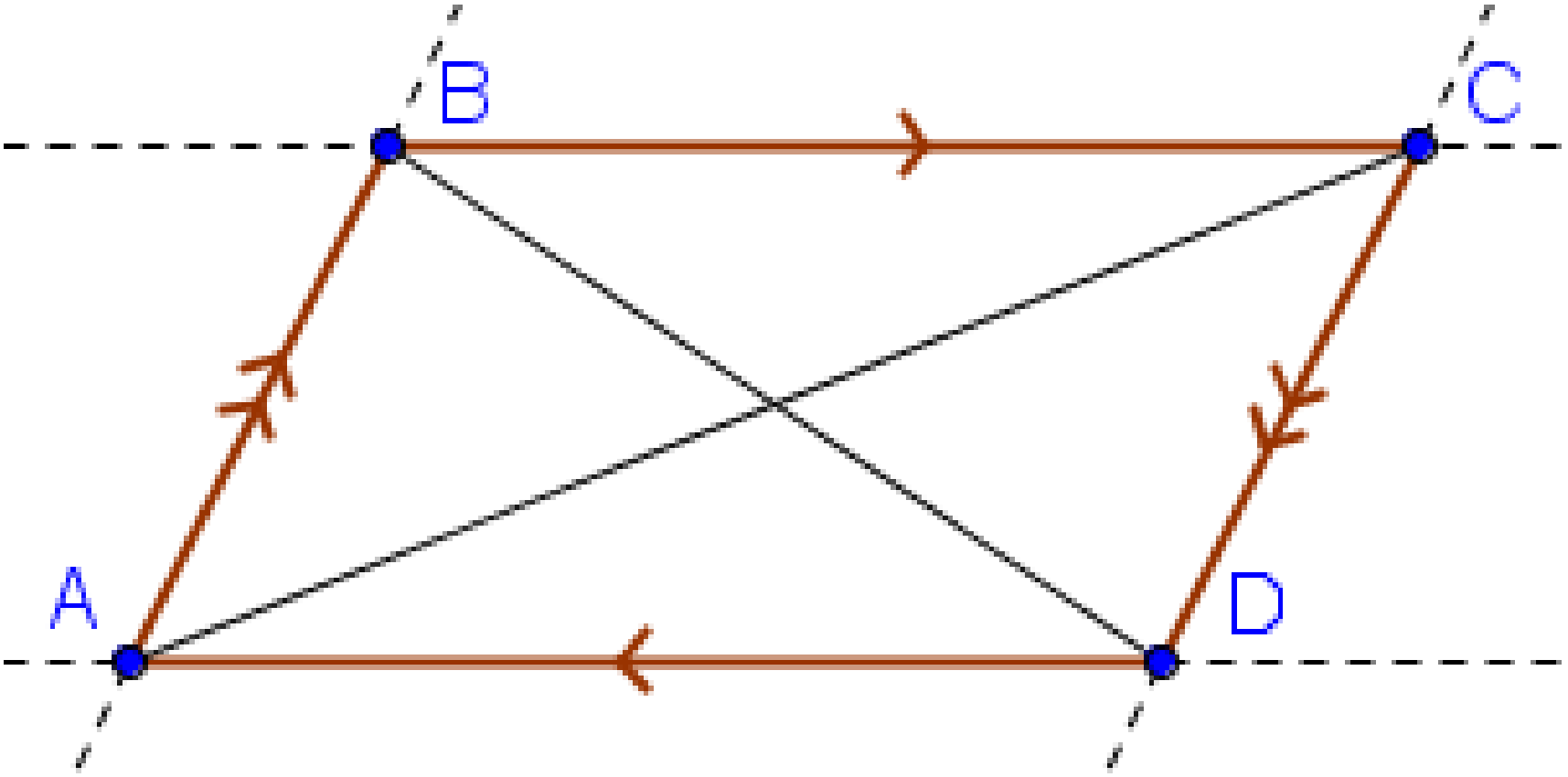
10: 3, 1

17: Various Solutions

I would create a triangle (in front of the cabin) using the two trees as vertices and then measure the length of the midsegment parallel to the tree side. The distance between the trees is twice the length of the midsegment.

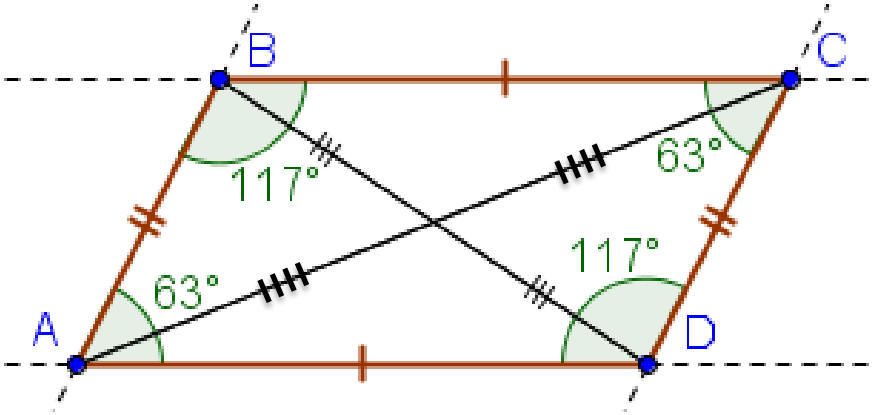
Properties of Parallelograms

- **What Conjectures can we make about Angles, Sides & Diagonals…Can you prove it?**



Parallelogram Conjectures

- **Opposite Angles**
  - The opposite angles of a parallelogram are congruent.
- **Consecutive Angles**
  - The consecutive angles of a parallelogram are supplementary.



- **Opposite Sides**
  - The opposite sides of a parallelogram are congruent.
- **Diagonals**
  - The diagonals of a parallelogram bisect each other.

Applied Math – Daily Summary

- **Announcements**
  - "Scale" Project for the Rest of the Week
- **Class Objectives**
  - Chapter 7 Test
- **Assignment**
  - Finalize Your "Scale" Project

“Ratio/Proportion” Projects

- **The project should focus on using Ratio/Proportion in an applied situation. Some options might be:**
  - Scale Drawings (Art, Design)
    - Drawing/graph paper with colored pencils
  - Blueprint (Architecture)
    - For example, measure section of school and create blueprint
  - Scale Models (Design & Engineering)
    - Maybe use toothpicks or spaghetti with glue
  - Technical Drawings (Design & Engineering)
  - Using Maps & Models (i.e., area of US States from map)
- **Any project must specify how ratio/proportion is being used, and it should be used correctly throughout.**