

Mr. Northcutt's Math Classes Class Presentation

September 9, 2008 – Day 6



Math 1



Math 2



Applied Math

Math 1 – Daily Summary

- **Announcements**

- Web Access, Notebook & Book Cover Check Tomorrow
- Quiz on Thursday (1-1 and 1-2) (*Take-Home Wednesday*)

- **Class Objectives**

- Simplify an Expression
- Exponents (base, exponent and power)
- Order of Operations (GEMDAS)
- Evaluate an Expression

- **Assignment**

- **Exercises 1-2:** 14-40 EVEN, 48, 53, 55, 60, 62, 76, 80

HW Solutions: 1.1 (part 2)

18: p = perimeter

s = length of side

$$p = 4s$$

20: l = number of slices left

e = number of slices eaten

$$l = 8 - e$$

22: n = number of tapes

c = cost

$$c = 8.5n$$

40: t = time in months

l = length in inches

$$l = 4.1 t$$

42: a = amount in dollars

q = number of quarters

$$a = 0.25 q$$

44: s = height of 2nd bounce

d = drop height (ft)

$$s = \frac{1}{4} d$$

Refresher

- **Write an Expression for:**
 - 4 less than the product of 2 and a number

- **Define Variables and write an Equation for:**
 - The total cost is the number of books times \$10.50 minus the product of the number of books and \$1.50

 - The perimeter of a regular hexagon is 6 times the length of one side.

Simplifying an Expression

- **Simplify = Replace (write) with its simplest name.**

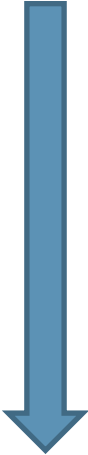
$$3 + 5 - 6 \div 2$$

$$3 + 5 - 6 \div 2$$

Order of Operations

- **Order of Operations**: Agreed order for doing operations.

$$3 + 5 - 6 \div 2$$



G rouping	<i>Go</i>
E xponents	<i>Exercise</i>
M ultiplication	<i>My</i>
D ivision	<i>Dear</i>
A ddition	<i>Aunt</i>
S ubtraction	<i>Sallie</i>

$$2[(13 - 7)^2 \div 3]$$

Exponents (short-hand multiplication)

- Exponents are a short-hand way to write the product (multiplication) of equal numbers.

$$3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 = 3^5$$

$$x \cdot x \cdot x \cdot x = \underline{\quad}$$

- A Power has two parts, a Base and an Exponent.

Base → 3^5 ← Exponent

$\underbrace{\hspace{1.5cm}}$
Power

$$2^3$$

$$2^x$$

$$x^4$$

Evaluating Expressions

- **Evaluate = Substitute a given Number for each Variable and Simplify (using Order of Operations).**
- **Let $c=7$ and $d=4$**

$$[(c - 5) \cdot d]^2$$

$$\frac{(c - d)}{c + d}$$

$$\frac{(c^2 + d^2) \div 5}{13}$$

Practice Problem

- Use the formula $C = p + r \cdot p$ to find the total cost of the purchase, where C is the total cost, p is the price, and r is the sales tax written as a decimal.
 - The coat costs \$40.00. The sales tax is 6%.

Math 2 – Daily Summary

- **Announcements**

- Web Access, Notebook & Book Cover Check Tomorrow
- Chapter 1 Test on Monday (*Take-Home Friday*)

- **Class Objectives**

- Terms in a Sequence

- **Assignment**

- **Lesson 1.4:** 1-9, 14-16

Finding the nth Term

- What if you needed to find the 200th term in the following sequences:

3, 7, 11, 15, 19,...

Term	1	2	3	4	5	6	7	8	...n
Value	3	7	11	15	19	23	27	31	F(n)



“Generating
Function”



32, 39, 46, 53, 60,...

Term	1	2	3	4	5	6	7	8	...n
Value	32	39	46	53	60	67	74	81	F(n)

Linear Sequence (Constant Difference)

- **Linear Sequence**: Has a generating function that creates sequences with a constant difference between terms.

n	1	2	3	4	5
$n-5$	-4	-3			

n	1	2	3	4	5
$2n+1$	3	5			

n	1	2	3	4	5
$3n-2$	1	4			

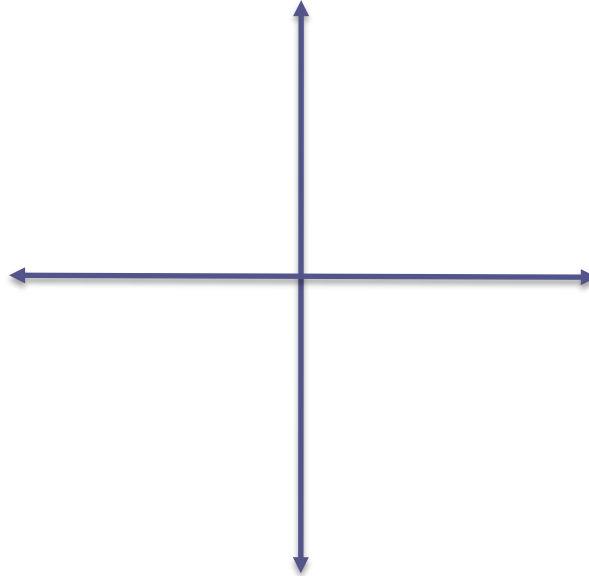
n	1	2	3	4	5
$5n+2$	7	12			

Linear Sequence – Why?

- **Why is it called a Linear Sequence?**

3, 7, 11, 15, 19,...

Term	1	2	3	4	5	6	7	8	...n
Value	3	7	11	15	19	23	27	31	$4n-1$



Applied Math – Daily Summary

- **Announcements**

- Web Access and Notebook Check on Wednesday
- Quiz on Thursday (1.1-1.4) (*Take-Home Wednesday*)

- **Class Objectives**

- Using Formulas (Science, Geometry, others...)

- **Assignment**

- Exercises 1.4: 7-12, 22, 24, 27, 29-32

HW Answers: 1.3

#7: 84 cm²

#10: 36 in²

#12: 800 cm²

#14: 77

#18: \$175,456

#24: 5728 ft³

#31: 69,480 lb.

#35: \$1,250

#36: 2

Formulas

- **A Formula is the statement of a rule using variables to represent the relationship of certain quantities.**
- **Formula 1: Work**
 - $W = f \times d$ (Work = Force x Distance)
 - Foot-Pounds
 - Joules (Newton-Meter)
- **Example**
 - A mechanic lifts an 1100 lb engine from the floor to a workbench 4 ft high. How much work has the mechanic done?

Formulas – Science & Technology

- **Ohm's Law**

- $E = IR$ (Energy(Voltage) = Current x Resistance)
- $P = I^2R$ (Power = Current² x Resistance)
- $P = EI$ (Power = Voltage x Current)

- **Units of Measure**

- Energy = Volts
- Current = Amperes (Amps)
- Resistance = Ohms
- Power = Watts (Work)

- **Other Formulas**

$$d = vt$$

$$f = ma$$

$$I = \frac{E}{R}$$

$$W = IEt$$

Formulas - Geometry

- **Area**

$$A_{\text{triangle}} = \frac{1}{2}bh$$

$$A_{\text{parallelogram}} = bh$$

$$A_{\text{trapezoid}} = \left(\frac{a+b}{2}\right)h$$

Practice Problem

- **Given $v_0=12$ m/s, $g = 32$ ft/sec², and $t = 5$ sec, find v .**

$$v = v_0 + gt$$

v_0 = initial velocity

g = acceleration (due to gravity)

t = time (sec)