

Daily Lesson Plans - Algebra 1 - Lesson 0.4 Tuesday, August 18

Lesson Objectives & Standards Addressed	Practice Arithmetic Operations on <u>signed</u> numbers Work on recognizing patterns Extend the idea of recursion to algebraic expressions Learn to evaluate an expression recursively on the calculator (optional) Learn the concept of an attractor G. Estimate, compute, and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions. (8-10) 4. Demonstrate fluency in computations using real numbers. (9) 6. Estimate, compute and solve problems involving rational numbers, including ratio, proportion, and percent, and judge the reasonableness of solutions. (8)
Daily Agenda	Find your seat – you need the worksheet from the way in & your calculator Pass up your homework from last night POP QUIZ Investigate Lesson 0.4 together as a class – participation required!!! Check and correct homework Begin working on tonight's homework While groups are working, show me: <ul style="list-style-type: none">• Book covers (for students who have not already shown me)• Class Required Materials (calculator, binder/folder, graph paper, etc.)
Homework Assigned	Due Wednesday <ul style="list-style-type: none">• p. 26 # 3-4, 7-8 and p. 31 # 2a, 3, 4, 11 Due Thursday <ul style="list-style-type: none">• p. 34 #1-4, 5b, 5d, 6-7 (Chapter Review)



TEST CHAPTER 0 IS ON FRIDAY



0.4

Going Somewhere?

In this lesson you will

- review operations with integers
- use a recursive process to evaluate expressions
- use a calculator to evaluate expressions
- identify the **attractors** of expressions

discuss home screen
iteration on calculator

Original expression: $-2 \cdot \square + 3$		
Starting number (at Stage 0): 0		
Stage number	Input	Result

1	0	3
2	3	-3
3	-3	9
4	9	-15
5	-15	33
6	33	-63

What is happening to the results?
Let's look at a Number Line Diagram.



NO ATTRACTOR

getting further and further from 0
alternating
pos & neg.

What happens when you evaluate this expression recursively with different starting numbers?

$$0.5 \cdot \square - 3$$

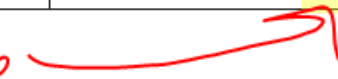
- expression - two or more numbers or variables combined with mathematical operation(s)

Let's see what happens for two different starting numbers.

Original expression: $0.5 \cdot \square - 3$	
Starting number: 4	
Input	Result
4	$0.5 \cdot (4) - 3 = -1$
-1	$0.5 \cdot (-1) - 3 = -3.5$
-3.5	$0.5 \cdot (-3.5) - 3 = -4.75$
-4.75	$0.5 \cdot (-4.75) - 3 = -5.375$
-5.375	$0.5 \cdot (-5.375) - 3 = -5.6875$
-5.6875	$0.5 \cdot (-5.6875) - 3 = -5.84375$

Original expression: $0.5 \cdot \square - 3$	
Starting number: -10	
Input	Result
-10	$0.5 \cdot (-10) - 3 = -8$
-8	$0.5 \cdot (-8) - 3 = -7$
-7	$0.5 \cdot (-7) - 3 = -6.5$
-6.5	$0.5 \cdot (-6.5) - 3 = -6.25$
-6.25	$0.5 \cdot (-6.25) - 3 = -6.125$
-6.125	$0.5 \cdot (-6.125) - 3 = -6.0625$

Original expression: $0.5 \cdot \square - 3$	
Starting number: -6	
Input	Result
-6	-6
-6	-6

approaching -6 
 What is happening to the results?

- evaluate = find the answer
- attractor - when an expression approaches a particular value after iteration
- fixed pt = a starting number that results in itself

-6 is called fixed point

