

Algebra, Calculus, and the ACT

ALEX KRYSL

Introduction and Context

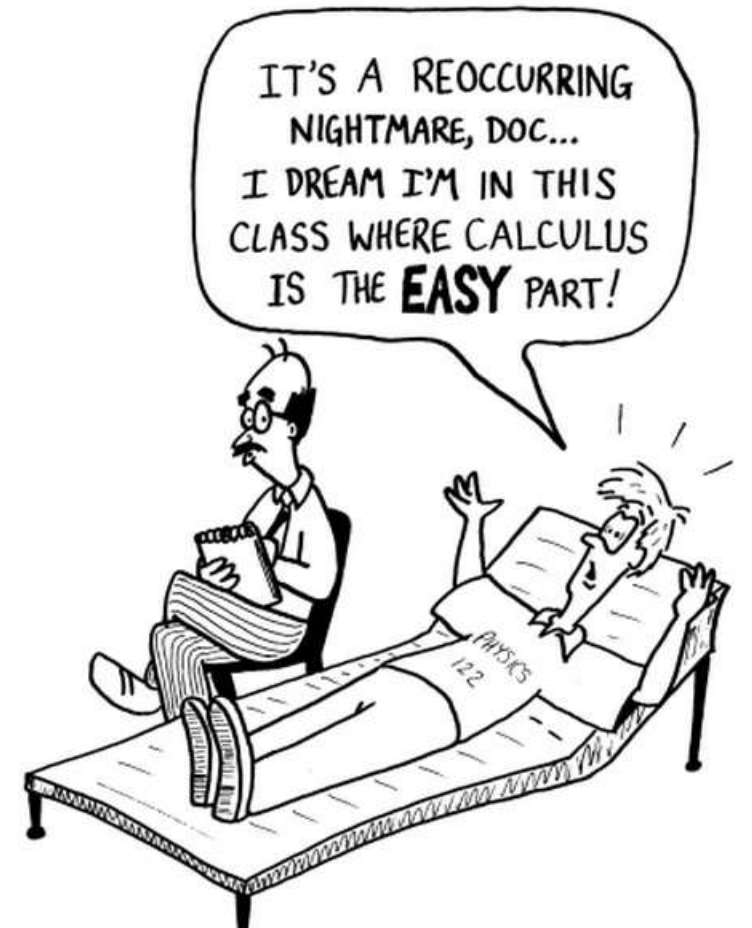
- ▶ Student Teaching Experience
 - ▶ Honors Calculus
 - ▶ Majority of Students Juniors
 - ▶ ACT Preparation
- ▶ Intersection with Algebra!



**“Of course you have problems!
You’re a math teacher.”**

Calculus and Algebra

- ▶ Calculus is actually not that hard!



Crazy Examples

$$f(x) = \frac{2x^4 + 3x^2 - 5}{4x^2}$$

$$f(x) = \frac{x^5 - 3x + 4}{2\sqrt{x}}$$

Most problems with the power rule requires application of the rules of exponents

Just-in-Time Review

- ▶ Researched Education Philosophy
 - ▶ Review the skills necessary for future topic directly beforehand
- ▶ Instituted this idea before teaching the power rule

Rules of Exponents

- ▶ Always on the ACT
- ▶ Integral in Calculus
- ▶ Preparation and Pertinent Instruction

1 $2x^2 \cdot 3x^3y \cdot 3x^3y$ is equivalent to

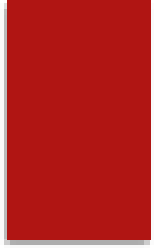
- (A) $8x^8y^2$
- (B) $8x^{18}y^2$
- (C) $18x^8y$
- (D) $18x^{18}y^2$
- (E) $18x^8y^2$

2 What is the product of m^3 and $2m^5$ and $\frac{1}{m^2}$?

- (F) $2m^{13}$
- (G) $2m^6$
- (H) $3m^{13}$
- (J) $4m^6$
- (K) $2m^{15} - m^2$

DATA

Score #1	Score #2	
2	3.5	
2	2	
3.5	4	
3	3.5	
2	4	
2	3.5	
2	2	
4	4	
2	2	
2	3.5	
3.5	3.5	
2	2	
2	3	
3	4	
2	2	
4	4	
2	3	
2	3	
2	3	
<u>AVERAGES</u>	2.473684211	3.131578947



Personal Reflections

- ▶ Implementation Earlier in Student Teaching
 - ▶ Factoring
 - ▶ In Relation to both the ACT and Calculus

Future Suggestions

- ▶ Higher-level Mathematics Teachers
 - ▶ Assess Potential Problems and Topics
 - ▶ Prepare Students for ACT
 - ▶ Fulfills Responsibilities
- ▶ Preparation for Calculus
 - ▶ Calculus is Algebra-heavy