MPM 1D Learning Goals & Success Criteria
Unit 3 Test 1 – Exponent Rules and Polynomial Expressions

Learning Goals

- I will be able to explain the exponent rules and apply them to numerical and algebraic expressions. (NA1)
- I will be able to simplify polynomial and numerical expressions and solve first degree equations using inverse operations. (NA2)
- I will be able to simplify numerical and polynomial expressions. (NA3)

Success Criteria

I can:

- Substitute into and evaluate algebraic expressions involving exponents. (NA1)
- Derive the exponent rules for multiplying and dividing monomials and apply these rules to polynomial expressions. (NA1)
- Extend the multiplication rule to derive the power of a power rule and apply it to simplify expressions. (NA1)
- Simplify numerical expressions involving integers and rational numbers, with and without the use of technology. (NA2)
- Solve problems requiring the manipulation of expressions arising from applications of percent, ratio, rate, and proportion. (NA2)
- Relate my understanding of inverse operations to squaring and taking the square root of a number or expression and apply inverse operations to solve equations. (NA2)
- Solve first degree equations, including those with fractional coefficients, using a variety of strategies. (NA2)
- Rearrange formulas involving variables with and without substitution. (NA2)
- Solve real-world problems modelled with first degree equations.(NA2)
- Add and subtract polynomials with up to two variables. (NA3)
- Expand and simplify polynomial expressions involving one variable. (NA3)

Test Information:

Your test date is listed below. **You have 90 minutes to complete it**. The more prepared you are, the less stressed you will feel about time! Please use some time over the break to practice the skills we have learned (exponent rules, polynomials, solving equations). Send me Edsby messages and ask for help if you need it! Also, please remember that you MUST work with fractions!!

Test Dates:

Cohort A – Monday, January 4th
Cohort B – Tuesday, January 5th

There is a more detailed test outline below. Please refer to that while you study.

To study:

- Review your notes while you complete some form of review organizer/study note. Try to connect the learning goals and success criteria to specific types of questions!!
- Redo your quizzes and the examples from the notes on your own.
- Correct your homework, and then complete the review handouts and suggested text questions.

Questions to Expect

Exponents

- Substitute into an expression without simplifying with exponent laws, then simplify it with laws before you substitute in (should produce the same answer).
- Define one or more exponent laws, and explain why they are true.
- Simplify expressions (with numbers and letters) by applying exponent laws.

Polynomials

- Make connections between whole number operations and algebraic operations (refer to p. 168 #14).
- Vocabulary multiple choice questions.
- Use colours to expand and simplify polynomial expressions.
- Explain why we need to simplify, as well as why we can only add or subtract like terms.
- Word problem where you are asked to create an expression to model a situation.

<table>
<tr><td></td><td>Equations</td><td>

Correct an incorrect solution and/or check, and clearly describe the error and how to fix it.
Explain why multiplying each term by a common denominator eliminates the fractions from an equation. You must understand operations and lowest terms!
Solve equations (4 of them)
Check one of the equations that you solved. Show all of your work (Common denominators, BEDMAS, etc).
Rearrange formulas to isolate a specific unknown (2 of them)
Solve for an unknown value by rearranging the formula.
Solve for an unknown value by substituting first, then rearranging.
Identify situations where it is more appropriate to rearrange the formula before you substitute.
Create equations to model situations and solve (word problems, 2 of them)

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<tr><td colspan="2"><u>Suggested Review:</u>
Extra handouts (exponent rules, expanding/simplifying, solving equations)
p. 174 #3, 4, 6 – 15, 16ace, 17 – 20
p. 176 #1 – 14,</td><td>p. 168 #14
p. 230 #1, 2, 4, 5, 7 – 9, 11 – 15
p. 232 #1 – 10</td></tr>
<tr><td colspan="3">Notes: Please study. Do the review, but more importantly review your notes & quizzes, make notes, etc. We have learned a bunch of stuff! Also, please use your calculator – don’t make addition and subtraction errors after you have done all of the hard stuff correctly ☺ If you need help message me on Edsby over the break and we can work through whatever you are struggling with.</td></tr>
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