Standard	#	Skill Description	Proficiency Tasks To be followed by an Exemplar and Quiz.
1.0	1	Real number Operations	1. What is a real number? 2. Show 10 different examples of each operation using integers and fractions.
	2	Real Number Properties	1. List and give an example of each real number property. 2. Explain the difference between associative property and commutative property. 3. Give 5 examples of how each property is used.
2.0	3	Exponent Rules (8.1, 8.2, 8.3, 8.4, 12.4)	1. Name and define all exponent rules. 2. What is a rational exponent? 3. Show 10 examples of how each exponent rule works. 4. Create 3 different exemplars combining exponent rules.
	4	Radicals (9.1, 9.2, 9.3,12.2, 12.3)	1. What is a radical? 2. Define product and quotient properties for roots. 3. Give 10 examples of product and quotient properties. 4. What does it mean to rationalize the denominator? 5. Do pg. 791: 18-25
4.0	5	Simplifying Expressions (2.6, 2.7)	1. Define: variable, term, expression, equation, coefficient, constant, like terms. 2. Give 10 examples of like terms, using different variables and exponents and 10 examples of unlike terms. 3. Give 10 examples of correctly combining like terms. (Include distributive property)
5.0	6	Simple Equations/Inequalities (3.1, 3.2)	1. What is an equation? 2. 10 examples (each) of solving two step equations and inequalities.
	7	Multi step Equations/Inequalities (3.3, 3.4, 3.5, 6.1,6.2,6.3)	1. 10 examples a(x+b) +c = d 2. 10 examples a(x+b) + c(x+d)=e 3. 10 examples a(x+b) +c = d(x+e) + f
3.0	8	Absolute value equations and inequalities (6.6, 6.7)	1. Define absolute value. 2. 10 examples of $\lvert x \rvert = a$. 3. 10 examples of $\lvert ax+b \rvert = c$. 4. 10 examples of $a\lvert bx+c \rvert + d = e$ 5. 5 inequalities < and > just like above.
6.0	9	Graphing lines (4.2, 4.3)	1. Define all parts of the coordinate plane. 2. Graph 10 y = mx +b lines using input/output and equation only. 3. Graph 10 ax + by = c lines.
	10	x and y intercepts (4.4)	1. What is an x intercept? y intercept? 2. Graph 10 lines in ax + by = c form using only x and y intercepts.

7.0	11	Slope (4.5)	1. What does slope really mean? 2. Find slope between (x_1, y_1) and (x_2, y_2) with 10 pairs of points in all 4 quadrants.
	12	Point on the line	1. Find the equations of 10 lines. Give 5 points that are on the line and 5 points that aren't.
	13	Point slope form (5.2)	1. Define point slope form. 2. Do the following 10 times each: • Graph lines given point and slope. • Give equation given point and slope. • Give equation given the line.
	14	Slope intercept form (4.7, 5.1, 5.3)	1. Define point slope form. 2. Do the following 10 times each: • Graph lines given y intercept and slope. • Give equation given slope and y intercept. • Give equation given the line.
	15	Standard form	1. Define point slope form. 2. Do the following 10 times each: • Give equation given two points. • Give equation given the line.
8.0	16	Parallel lines	1. What does parallel mean? 2. Show 10 examples of parallel lines by graph and equation. Show 5 examples of lines that aren't parallel. 3. Given two equations in standard form, determine if lines are parallel. 4. Give equation of line parallel to $y = mx + b$ but goes through point (c,d).
	17	Perpendicular lines (5.6)	1. What does perpendicular mean? 2. Show 10 examples of perpendicular lines by graph and equation. Give 5 examples of lines that aren't perpendicular. 3. Given two equations in standard form, determine if lines are perpendicular. 4. Give equation of line perpendicular to $y = mx + b$ but goes through point (c,d).
9.0	18	Solve Linear System (substitution) (7.2, 7.4)	1. What does the solution to a linear system represent? 2. What does substitution mean? 3. Give 10 examples of linear systems solved by substitution.
	19	Linear Systems (Linear Combo) (7.3, 7.4)	1. Write 10 different systems in standard form and explain which variable you would eliminate first. 2. Create a linear system that would intersect at a point you choose, then show how to solve using linear combo. (10 times)
	20	Systems of Inequalities (7.6)	1. Graph 10 linear inequalities. 2. Explain how you decide which side of the line to shade. 3. Graph 10 different linear systems in $ax + by < c$ form. Give an example of one point

			that is a solution and three that aren't.
15.0	21	Work problems (3.8, 11.7)	1. Give an example of a work problem. 2. Create and solve 10 equations using fraction busters. 3. Explain how to set up the equation for work problems. 4. Create and solve 10 work problems.
	22	Rate problems (3.8, 11.7)	1. Give an example of a rate problem where two vehicles are traveling: a. the same direction, b. opposite directions and c. perpendicular directions 2. Find 10 different word problems that involve rates and solve them.
	23	Mixture Problems (11.7)	1. What is a mixture problem? 2. Show 10 examples of mixture problems and solve them.
21.0	24	Graph quadratics (9.4)	1. What is a quadratic? 2. Name all "key points" on a parabola. 3. What does the parabola do when you change the "a" value? 4. How can you find the vertex?
14.0	25	Solve quadratics by factoring (10.5, 10.6)	1. Explain zero product property. 2. Why do we use the zero product property to solve quadratic equations? 3. What point(s) does this help us find? 4. Create and solve 10 diamond problems. 5. Create 10 different quadratics that can be solved by factoring and solve them.
	26	Solve quadratics by completing the square	1. What does 'completing the square mean?' 2. Show 5 examples of solving a quadratic by completing the square. 3. List the steps for completing the square. 5. Create 10 examples and solve them.
19,20	27	Quadratic formula (9.6)	1. What is the quadratic formula? 2. Be able to state the quadratic formula verbally from memory. 3. Be able to write the quadratic formula on the spot. 4. Create 10 quadratics and solve them using the quadratic formula.
21.0	28	How many roots? (9.7)	1. What is the discriminant? 2. When does a quadratic have 2 solutions? 1 solution? 0 real solutions? 3. Create 5 quadratics that have 2, 1 and 0 solutions (total of 15) and show why.
23.0	29	Falling object	1. Does a ball fall at a constant speed? Why or why not? 2. Explain what the ball does as it falls. 3. What is the falling object model? 4. What does starting height mean? 5. What is the height of a ball when it hits the ground? 6. Create 10 falling object situations and tell when the ball will hit the ground. 7. How high is the ball after .5 seconds?

	30	Thrown object	1. What is the thrown object model? 2. What is the difference between falling and thrown object models? 3. When is velocity negative? 4. Create 10 thrown object situations and tell when the ball hits the ground? (positive and negative velocities) 5. How high does the ball go?
10.0	31	Add and subtract polynomials (10.1)	1. Define: monomial, binomial, trinomial and polynomial. 2. What is the degree of a polynomial? 3. What does descending order mean? 4. Write 10 polynomials (at least degree 5) in descending order. 5. Write 10 polynomials (at least degree 5) that ***aren't*** in descending order. 6. Create 10 3rd degree polynomials and add them, then subtract them.
	32	Multiply polynomials (10.2, 10.3)	1. Show 5 examples of distributive property. 2. Show 5 examples of multiplying two digit numbers using the distributive property and 5 using a generic rectangle. (multiplying the algebra way) 3. 5 examples of multiplying polynomials using generic rectangle or algebra tiles. Draw it. 4. 5 examples of multiplying polynomials using distributive property.
11.0	33	Factor polynomials (10.7, 10.8)	1. Factor 5 polynomials: $ax^2 + bx$ using tiles. Draw it. 2. Factor 5 polynomials: $x^2 + bx + c$ 3. Factor 5 polynomials: $ax^2 + bx + c$ 4. Create 5 polynomials that will factor and 5 that won't. Explain. 5. What are the special products? Give two examples of each.
12.0	34	Simplify polynomial fractions (11.3)	1. Define the following: sum, product, term, factor. 2. Write 5 examples of polynomials that are written as a product. Write 5 examples of polynomials that are written as a "sum." 3. Give an example of a polynomial fraction. What makes it a polynomial fraction? 4. Create 5 examples of polynomial fractions that can simplify and 5 that are already simplified. 5. Simplify 5 fractions containing monomials. 5 containing binomials. 5 containing trinomials.
13.0	35	Multiply and divide polynomial fractions (11.4)	1. What are the rules for multiplying fractions? Dividing fractions? 2. Give 5 examples of multiplying simple fractions. 5 examples of dividing simple fractions. 3. Create 5 examples of polynomial fractions that will simplify when multiplied. 4. Create 5 examples of polynomial fractions that will simplify when divided.
	36	Add and subtract polynomial fractions (11.5, 11.6)	1. What is a LCM? What is an LCD? 2. Pick 3 numbers, how do you find the LCM?

			3. Write 3 fractions with different denominators. Add them and show your work. 4. Pick two binomials. Find their LCM? 5. Create 5 fractions with binomials in the denominator. Re write them so that they have a common denominator. 6. Do pg. 793: 29-38
16,17,18	37	Functions	1. What is a function? 2. Using ordered pairs: give 5 examples of functions and 5 examples of non-functions. 3. Using input/output tables: give 5 examples of functions and 5 examples of non-functions. 4. Sketch the graphs of 5 functions and 5 non-functions. 5. What is domain and range? 6. Sketch 5 graphs and give the domain and range.

Advanced Tasks

Choose one task from each column. You must complete the task from column 1 before moving to column 2. Once you have completed your tasks from each column, you will be ready to take your final assessment for this standard.

Column 1	Column 2
• Create a mini lesson in order to teach an absent student the skills necessary to succeed with this standard. Be prepared to explain your lesson. • Find an example of how your skill may be used or found in the real world. Explain how this skill applies. • Produce an image (picture or video) that represents this skill. Be sure to demonstrate how this image is related to the skill. • Peer Tutor. Your task will be complete when the student you are tutoring becomes proficient in this skill. • Project. (to be agreed upon by student and teacher.)	Answer one of the following questions: • What are the most common mistakes that a student might make when performing this skill? How would you advise them to avoid making these mistakes? • What is the most important thing a student must be able to do in order to be successful with this skill? What skills must a student learn before they can move on to this skill? • How would you decide to assess this skill? What would a student need to know to earn an A, B or C?