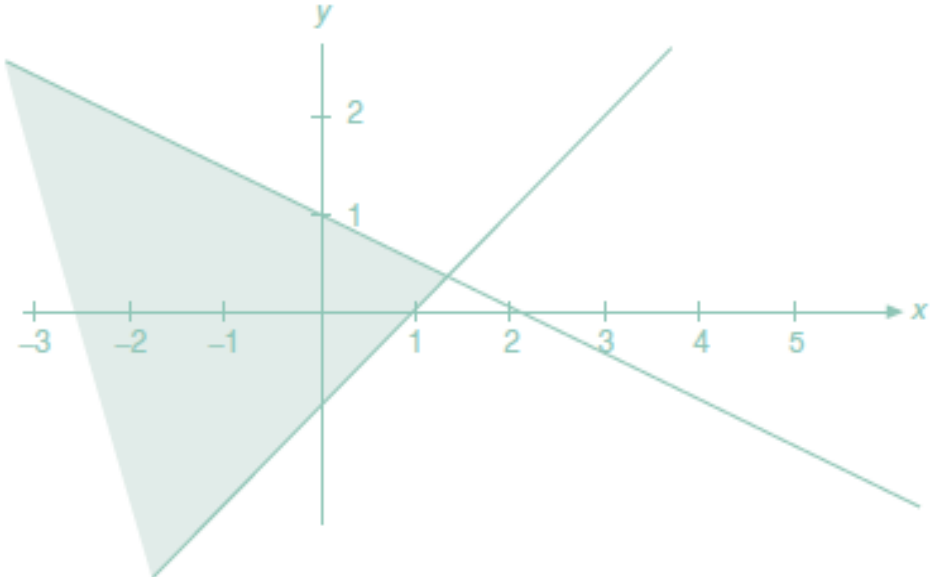


Juneau School District
Math Core Standards
Algebra I

Standard	Algebra and Functions
AI-CS1	Students understand linear equations and solve systems of linear equations. (2 linear equations in 2 unknowns)
	<p>* Simplify expressions before solving linear equations and inequalities in one variable such as: $3(2x-5) + 4(x-2) = 12$</p> <p style="text-align: center;">For what values of x is the following inequality valid?</p> <p style="text-align: center;">$5(x-1) > 3x+2.$</p> <p style="text-align: center;">Expand and simplify $2(3x+1) - 8x.$</p>
	<p>* Solve multi-step problems, including word problems, involving linear equations and linear inequalities in one variable and provide justification for each step.</p> <p style="text-align: center;">A-1 Pager Company charges a \$25 set-up fee plus a \$6.50 monthly charge. Cheaper Beeper charges \$8 per month with no set-up fee. Set up an inequality to determine how long one would need to have the pager until the A-1 Pager plan would be the less expensive one.</p>
	<p>* Graph a linear equation by finding the x- and y- intercepts (e.g. graph $2x+6y=4$). Graph a linear equation using the slope-intercept form (e.g. graph $y=2x+1$) Sketch the region defined by linear inequalities (e.g. $2x+6y<4$).</p>

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Standard	Algebra and Functions
AI-CS1	<p data-bbox="480 326 1503 396">Find inequalities whose simultaneous solution defines the region shown below:</p>  <p data-bbox="373 1003 1818 1122">* Verify that a point lies on a line, given an equation of the line. Students are able to derive the standard of slope-intercept form of linear equations by using the point-slope formula.</p> <p data-bbox="480 1154 1457 1230">Does the point $(1, 2)$ lie on, above, or below the graph of the line $3x - 5y + 8 = 0$? Explain how you can be sure of your answer.</p> <p data-bbox="480 1260 1535 1305">Write the equation of the line having x-intercept $-2\frac{1}{3}$ and y-intercept 5.</p> <p data-bbox="373 1338 1818 1456">* Solve a system of two linear equations in two variables algebraically (substitution and elimination) and are able to interpret the answer graphically. Students are able to solve a system of two linear inequalities in two variables and to sketch the solution sets.</p>

**Juneau School District
Math Core Standards
Algebra I**

Standard	Algebra and Functions
AI-CS1	<p>Solve and sketch the lines and the solution set:</p> $3x + y = -1$ $x - \frac{1}{2}y = \frac{4}{3}$
	<p>* Solve multi-step literal equations. $F = \frac{5}{9}(C + 32)$ Solve for C.</p>
AI-CS2	<p>Students understand the structure of quadratic equations. Interpret graphs of quadratic functions, find the zeros, and factor second degree polynomials.</p>
	<p>* Solve a quadratic equation by factoring or completing the square.</p>
	<p>* Know the quadratic formula and be familiar with its proof by completing the square.</p> <p style="text-align: center;">Toni is solving this equation by completing the square.</p> $ax^2 + bx + c = 0 \text{ (where } a \geq 0\text{)}$ <p>Step 1. $ax^2 + bx = -c$</p> <p>Step 2. $x^2 + \frac{b}{a}x = -\frac{c}{a}$</p> <p>Step 3. ?</p> <p style="text-align: center;">Which response shown below should be step 3 in the solution?</p> <ol style="list-style-type: none"> 1. $x^2 = -\frac{c}{b} - \frac{b}{a}x.$ 2. $x + \frac{b}{a} = -\frac{c}{ax}.$ 3. $x^2 + \frac{b}{a}x + \frac{b}{2a} = -\frac{c}{a} + \frac{b}{2a}.$ 4. $x^2 + \frac{b}{a}x + \left(\frac{b}{2a}\right)^2 = -\frac{c}{a} + \left(\frac{b}{2a}\right)^2.$

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Algebra I**

Standard	Algebra and Functions
AI-CS2	<p>* Use the quadratic formula to find the roots of a second-degree polynomial and to solve quadratic equations.</p> <p style="color: #00a651; text-align: center;">Suppose the graph of $y = px^2 + 5x + 2$ intersects the x-axis at two distinct points, where p is a constant. What are the possible values of p?</p>
	<p>* Graph quadratic functions in standard and vertex forms, know that their roots are the x-intercepts and interpret basic shifts.</p> <p style="color: #00a651; text-align: center;">The graph of $y = x^2 + bx - 1$ passes through $(-\frac{1}{3}, 0)$</p> <p style="color: #00a651; text-align: center;">What is b?</p>
	<p>* Apply quadratic equations to physical problems, such as the motion of an object under the force of gravity.</p>
AI-CS3	<p>Students are fluent in using symbolic notation. Manipulate monomials, polynomials, and rational expressions algebraically.</p>
	<p>* Add, subtract, multiply and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques.</p>
	<p>* Add, Subtract, multiply, and divide rational expressions.</p>
	<p>* Understand and use such operations as taking the opposite, finding the reciprocal, taking root, and raising to a simple fractional power. They understand and use the rules of exponents.</p> <p style="color: #00a651; text-align: center;">Simplify $(x^3 y^{\frac{1}{2}})^6 \sqrt{xy}$.</p>

**Juneau School District
Math Core Standards
Algebra I**

Standard	Algebra and Functions
AI-CS3	* Simplify fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms. <p style="text-align: center;">Simplify $\frac{x^2+2x+1}{x^2-1}$.</p>
	* Express square roots in simplest radical form.
	* Multiply and divide numbers in scientific notation.
Measurement and Geometry:	
AI-CS4	Students use ratios to convert measurements
	* Converts square and cubic units within the same system. * Use scientific notation to express numbers.

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