

**Grade 7 UCSD Math
Iowa Core Standards
UCSD I Can Statements**

Iowa Core Domains (Blue Print)

Iowa Core Domains (Red Print)

Iowa Core Standards Clusters

UCSD I Can Statement for Iowa Core

Ratios and Proportional Relationships

Analyze proportional relationships and use them to solve real-world and mathematical problems.

1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. (7.RP.1) DOK 1, 2

LT 2) I can calculate unit rates in like or different units.

2. Recognize and represent proportional relationships between quantities. (7.RP.2) DOK 1, 2

LT 1) I can classify whether two ratios are proportional by using a table or graph.
LT 3 and 5) I can identify unit rates in tables, graphs, equations, diagrams, coordinate planes, and verbal descriptions.

LT 4) I can illustrate a proportional relationship through equations.

3. Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error. (7.RP.3) DOK 1, 2

LT 6) I can use proportional relationships to solve multistep problems involving ratios and percents

Number System

Apply & extend previous understandings of operations with fractions to add, subtract, multiply & divide rational numbers.

1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. (7.NS. 1) DOK 1, 2

LT 1) I can state an example of combining opposites to equal 0 and show that a number and its opposite have a sum of 0.

LT 8) I can calculate real world problems using all operations with rational numbers.

LT 2) I can show the distance between two numbers is the absolute value of their difference in a real world context.

LT 3) I can use properties to add and subtract rational numbers.

2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. (7.NS. 2) DOK 1, 2

LT 4) I can multiply rational numbers using the distributive property and the rules of signed numbers.

LT 5) I can multiply and divide rational numbers by using number properties.

LT 6) I can rewrite a fraction as a decimal using long division.

LT 7) I can show that the decimal form of a rational number ends in zeros or eventually repeats.

LT 8) I can calculate real world problems using all operations with rational numbers.

3. Solve real-world and mathematical problems involving the four operations with rational numbers. (7.NS. 3) DOK 1, 2

LT 8) I can calculate real world problems using all operations with rational numbers.

Expressions and Equations

Use properties of operations to generate equivalent expressions.	
1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. (7.EE. 1) DOK 1	LT 2) I can use properties to simplify expressions. For example, to add, subtract, factor, and expand expressions.
2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05." (7.EE.2) DOK 1, 2	I can recognize equivalent expressions.
Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	
3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.(7.EE. 3) DOK 1, 2, 3	LT 5) I can calculate real world multi step problems with positive and negative numbers (Whole numbers, fractions, and decimals). LT 1) I can calculate the conversion between whole numbers, fractions, decimals, and percents. LT 4) I can assess the reasonableness of my answer using estimation strategies
4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. (7.EE. 4) DOK 1, 2, 3	LT 6) I can calculate real world problems in the form of $px+pq=r$ and $p(x+q)=r$. LT 3) I can calculate the solutions of equations by using algebraic equations to solve for an unknown value. LT 8) I can calculate real world problems in the form of $px+q<r$ or $px+q<r$. LT 7) I can graph inequalities and interpret the answer.
Geometry	
Draw, construct and describe geometrical figures and describe the relationships between them.	
1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. (7.G.1)DOK 1, 2	LT 1) I can calculate the actual length and area from a scale drawing. LT 2) I can construct a scale drawing at a different scale.
2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. (7.G.2) DOK 1, 2	LT 3) I can draw triangle when given three measures of angles or sides. LT 3) I can classify the type of triangle(s) that is formed when given three measures of angles or sides.
3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. (7.G.3) DOK 1, 2	LT 9) I can recognize the 2D figures that are made from slicing a 3D figure.
Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	
4. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. (7.G.4) DOK 1, 2	LT 4) I can identify the correct formula for calculating the area and circumference of a circle LT 4) I can use the correct formula for calculating the area and circumference of a circle. LT 5) I can interpret how the formulas for circumference and area of a circle are created.
5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.(7.G.5) DOK 1, 2	LT 6) I can calculate and identify the supplement or complement of angles given on angle measurement in a figure with many angles. LT 7) I can calculate to identify the vertical and adjacent angle measures given on angle measurement in a figure with many angles.

<p>6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. (7.G.6) DOK 1, 2</p>	<p>LT 8) I can interpret and calculate real world problems involving area of 2D objects, including triangles, quadrilaterals, and polygons.</p> <p>LT 9) I can interpret and calculate real world problems involving volume and surface area of 3D objects, including cubes and right prisms.</p>
<p>Statistics and Probability</p>	
<p>Use random sampling to draw inferences about a population.</p>	
<p>1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. (7.SP.1) DOK 2</p>	<p>LT 1) I can use statistics to infer information about a population by looking at a sample of that population.</p> <p>LT 2) I can distinguish if a generalization of a population is valid.</p> <p>LT 2) I can use random sampling to construct a valid inference that represents a general population.</p>
<p>2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be. (7.SP.2) DOK 2, 3</p>	<p>LT 2) I can use data from a random sample to infer about an unknown characteristic of a population.</p> <p>LT 4) I can draw conclusions from multiple samples of the same size to gauge the variation in predictions.</p>
<p>Draw informal comparative inferences about two populations.</p>	
<p>3. Informally assess the degree of visual overlap of two numerical data distributions with similar variability's, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable. (7.SP.3) DOK 2, 3</p>	<p>LT 5) I can construct and compare visual data of two sets to informally determine the amount of mean absolute deviation between the two populations.</p>
<p>4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book. (7.SP.4) DOK 2, 3</p>	<p>LT 3) I can interpret statistical data from a random sample to compare populations.</p>
<p>Investigate chance processes & develop, use and evaluation probability models.</p>	
<p>5. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. (7.SP.5) DOK 1</p>	<p>LT 6) I can illustrate that the probability of an event is on a scale from 0 to 1. this scale tells us how likely the event is to occur.</p>
<p>6. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. For example, when rolling a number cube 600 times, predict that a 3 or a 6 would be rolled roughly 200 times, but probably not exactly 200 times. (7.SP.6) DOK 2, 3</p>	<p>LT 11) I can estimate the probability of a chance event based on experimental data.</p>
<p>7. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. (7.SP.7) DOK 2, 3</p>	<p>LT 7) I can construct a model to find the probability of events.</p> <p>LT 8) I can construct a model to draw conclusions about the probability based on observing frequencies.</p>

8. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. (7.SP.8) DOK 1, 2, 3	LT 9) I can use a fraction to represent the probability of a compound event. LT 10) I can collect and display compound probability by creating organized lists, tables, and tree diagrams. LT 11) I can construct an experiment to collect data for compound events.
Standards of Mathematical Practice	
Make sense of problems and persevere in solving them. Reason abstractly and quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
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