

MATHEMATICS FRAMEWORKS MATRIX
Math Connections *Algebra 1* and *Geometry*

MATH Connections Correlation to the MA Frameworks

Number Sense and Operations

- Understand numbers, ways of representing numbers, relationships among numbers, and number systems
- Understand meanings of operations and how they relate to one another
- Compute fluently and make reasonable estimates

Number	Standard	Coverage	Sample Problems
10.N.1	Identify and use the properties of operations on real numbers, including the associative, commutative, and the distributive properties; the existence of the identity and inverse elements for addition and multiplication; the existence of the n^{th} roots of positive real numbers for any positive integer n ; and the inverse relationship between taking the n^{th} root of the n^{th} power of a positive real number.	Book 1a Sections: 1.7, 2.1, 2.3, 2.7, 5.2	<ul style="list-style-type: none"> ▪ Do the following arithmetic mentally using the distributive property (in each case give an algebraic representation of the pattern you are using): $67 \cdot 99$, $98 \cdot 38$ ▪ Use the commutative and associative laws to do the following arithmetic problems mentally: $24 + 28 + 12 + 46$ ▪ Can you find any values of a and b that make $a + b = b + a$ a false statement? ▪ Can you find any values of a and b that make $b = a + 4$ a false statement? ▪ Is exponentiation commutative? Does $a^b = b^a$?
10.N.2	Simplify numerical expressions, including those involving positive integer exponents or the absolute value. e.g., $3(24 - 1) = 45$, $4 3 - 5 + 6 = 14$; apply such simplifications in the solution of problems.	Book 1a Sections: 1.6, 2.5, 2.6, 2.7, 5.2	<ul style="list-style-type: none"> ▪ Compute each of these numbers mentally, without using a calculator: $16 - 20$ ▪ Can each of the following be expressed as a power of two: $2^5 \cdot 2^5$, 0, and 1? ▪ Write x^{-2} with a positive exponent. ▪ Simplify $(-3)^4$ ▪ Find the fifth root of 5
10.N.3	Find the approximate value for the solutions to problems involving square roots and cube roots without the use of a calculator, e.g., $\sqrt{32} - 1 \approx 4.7$.	Book 1a Sections: 1.7, 5.2	<ul style="list-style-type: none"> ▪ Which of the following pairs is the square root of 90 between? ▪ Find the cubed root of 3.
10.N.4	Use estimation to judge the reasonableness of results of computations and of solutions to problems involving real numbers.	Book 1a Sections: 1.4, 1.7	<ul style="list-style-type: none"> ▪ Given the results of a two week survey of restaurant customers ordering chicken dinners, estimate the sum and the mean of the data, check your result using a calculator and if your estimate and calculation do not agree, look back to find the error and try again. ▪ Estimate the standard deviation of the data in display 1.49. Is it about the typical distance from the mean?

Patterns, Relations, and Algebra

- Understand patterns, relations and functions
- Represent and analyze mathematical situations and structures using algebraic symbols

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- Use mathematical models to represent and understand quantitative relationships
- Analyze change in various contexts

Number	Standard	Coverage	Sample Problems
10.P.1	Describe, complete, extend, analyze, generalize, and create a wide variety of patterns, including iterative, recursive (e.g., Fibonacci Numbers), linear, quadratic, and exponential functional relationships.	<p>Book 1a Sections: 2.1, 2.2, 2.5, 3.3, 3.5, 3.6, 4.1 – 4.5</p> <p>Book 1b Sections: 5.3, 6.2, 6.3, 6.4, 6.5</p> <p>Book 2a</p>	<ul style="list-style-type: none"> ▪ A bacterial culture is being treated with ultraviolet rays to kill the bacteria. Using the data in Display 2.16, write an equation to summarize the relationship of treatment length and percent bacteria surviving and then predict what percentage would survive after 4 hours and 24 hours. ▪ Claire started working for the Chesapeake Company for \$18,000 per year. The company has a policy of increasing salaries 5% each year. What will Claire earn next year? The year after? In how many years will she be earning \$30,000? ▪ A straight ramp starts at ground level and ends 2 feet above the ground after 12 horizontal feet. What is its slope? If you wanted to put vertical braces, equally spaced, between the beginning and end, where would you put them? How high would each be? ▪ In the sequence 4, 7, 10, 13, 16, ..., how can you find each term (after the first) from the term just before it? Find $s(6)$ and $s(17)$. Now enter this into the TI-83 calculator as a recursively defined sequence. Look at the values for 10, 20, 30, ..., to help find the relationship between the terms. Write the sequence as an algebraically defined sequence. Find $s(1000)$, $s(567)$, and $s(1000000)$. ▪ Draw a (step function) graph of the tax function t that extends Display 6.22 to the domain of all sale prices up to \$2.00. ▪ Assuming continuously compounding growth, write a formula for a function U that gives the U.S. population after n years assuming an annual growth rate of 0.9% per year since the 1990 U.S. census population of 249 million. Compute the approximate population in the years 2000, 2025, and 2050. At this growth rate, how many years will it take the U.S. population to double? In what year does that occur?

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10.P.2	<p>Demonstrate an understanding of the relationship between various representations of a line.</p> <p>Determine a line's slope and x- and y- intercepts from its graph or from a linear equation that represents the line. Find a linear equation describing a line from a graph or a geometric description of the line, e.g., by using the "point-slope" or slope y-intercept" formulas.</p> <p>Explain the significance of a positive, negative, zero or undefined slope.</p>	<p>Book 1a Sections: 3.3, 3.4, 3.5, 3.6 Book 2b Sections: 4.4, 6.1</p>	<ul style="list-style-type: none"> ▪ Draw a coordinate system on a piece of paper then draw the straight line through (0,0) and (1,2). Can you find the coordinates of another point on the line? Can you find the y-value of a point (2,y) on this line? Find the x-value of a point (x,10) on this line. ▪ When we compute the slope of a line from two points on it, does the order in which we use the points ever affect the result? Why or why not? ▪ Write the coordinates of five points that must be on the line of $y = \frac{2}{3}x$. ▪ Find the slope of the line through (3,5) and the origin. ▪ Describe some relationship between the slope numbers and the picture of a line with that slope. ▪ How could you change an equation of a line sloping up to an equation sloping down? ▪ Is $y = 5$ a linear equation? If so, then what are a and b? ▪ What equation describes the line $y = 2x$ moved up by 25? By 3.724? by $\frac{4}{7}$? ▪ The equation $y = _x - 3$ represents a line. Write a sentence or two to describe the graph of this line. Is (4, -1) on this line? Find the coordinates of three other points on this line. Use the TRACE key on your calculator to check your answers. ▪ Using the points (32, 0) and (212, 100), boiling and freezing points in centigrade and Fahrenheit, find the equation of the line joining these points. ▪ Use the graph of the line connecting the above points and your equation, estimate the Celsius temperature for 50F. Which is easier to use, the graph or the equation? ▪ Use the fact that all circles are similar to justify the claim that the function which relates radius to circumference must be a straight line. ▪ A catering company charges a fixed fee and then a charge per plate for each plate for each person who eats at the banquet. If it costs \$2,000 for 100 people and \$3,500 for 200 people, what is the fixed fee and the price per plate?

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10.P.3	Add, subtract, and multiply polynomials. Divide polynomials by monomials.	Book 2a Sections: 1.6, 2.6, 3.5 Book 2b Sections: 5.4, 5.5, 5.8 Book 2b 6.1, 6.2, 6.3	<ul style="list-style-type: none"> ▪ Only multiplying binomials (and polynomials) – make a diagram to help write an equivalent expression for each of the following: $(y + 10)^2$, $(2z + 4)^2$, $(x + 7)(X + 5)$, and $(x + 3y + 5)^2$ ▪ Given lengths 4, 5, and 7 inches, find its perimeter; the length of the altitude from the 7 inch side to its opposite vertex; the length of the two segments created by the altitude. ▪ Two ships leave the harbor at Boston. The angle between their paths is 43°. One ship is traveling at a rate of 25 miles per hour. At the end of two hours, what is the distance between the two ships? ▪ The area of the disk depends upon its radius, marked x. This radius x is one leg of a right triangle whose other two sides are a and r. In terms of a and r, what is the area of this disk? ▪ What is the volume of the cone that has been taken out of the cylinder in display 5.38? ▪ Write an equation that describes a circle with radius 10cm centered at $(8,-6)$. Find a number x such that $(x,4)$ in on the circle. ▪ Solve the following system by the method of elimination. $X - y = -1$ and $x + y = 3$
10.P.4	Demonstrate facility in symbolic manipulation of polynomial and rational expressions by rearranging and collecting terms; factoring [e.g., $a^2 - b^2 = (a - b)(a+b)$, $x^2 + 10x + 21 = (x+3)(x+7)$, $5x^4 + 10x^3 - 5x^2 = 5x^2(x^2 + 2x - 1)$]; identifying and canceling common factors in rational expressions; and applying the properties of positive integer exponents.	Book 2a Sections: 1.6 Book 2b Section: 4.4	<ul style="list-style-type: none"> ▪ Make a diagram that will help you write an equivalent form of the given expression. Then use the Distributive law to show algebraically that the two forms are equivalent. $(y + 10)^2$ ▪ Draw a diagram to explain why $(x + y)^2 \neq x^2 + y^2$ ▪ Write a function that gives a formula for finding the radius of a circle from its area.

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Number	Standard	Coverage	Sample Problems
10.P.5	Find solutions to quadratic equations (with real roots) by factoring, completing the square, or using the quadratic formula. Demonstrate an understanding of the equivalence of the methods.	Book 1a Sections: 1.6, 1.7, 2.4 Book 2a Sections: 1.6, 1.8	<ul style="list-style-type: none"> ▪ All solutions to $(x-2)(x-4) = 0$ are in the list 1,2,3,4, and 5. Check to see which are actually solutions to the equation. ▪ Recall that $x^2 = x * x$, find the two solutions to the equation $x^2 = 16$. ▪ Find a solution to $9 - y^2 = 5$. ▪ A right triangle has one side 27 yards long and a hypotenuse 40 yards long. How long is the other side? Round your answer to one decimal place. Also find the area and perimeter.
10.P.6	Solve equations and inequalities including those involving absolute value of linear expressions (e.g., $ x - 2 > 5$) and apply to the solution of problems.	Book 1a Sections: 2.4 Book 2b Sections: 4.4,5.8	<ul style="list-style-type: none"> ▪ Solve the equation $37.75 = 0.09 u + 8.50$ for u. ▪ The Cheapo Rental Agency charges \$90 a week and 35 cents a mile to rent a Taurus, write an equation giving the total cost for a week. Cheapo sends you a bill for \$212.50, how many miles do they claim you drove? ▪ Using a rectangular coordinate system with inches as the unit of measure, describe each of these objects in set-builder notation. A solid 10 by 8 by 4 inch rectangular block with one corner at $(0,0,0)$.

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10.P.7	Solve everyday problems that can be modeled using linear, reciprocal, quadratic, or exponential functions. Apply appropriate tabular, graphical, or symbolic methods to the solution. Include compound interest, and direct and inverse variation problems. Use technology when appropriate.	Book 1a Sections: 2.4, 2.5, Ch. 4 Book 1b Sections: 6.4, 6.5 Book 2a Sections: 1.9 Book 2b Sections: 6.1	<ul style="list-style-type: none"> ▪ The drama club is doing a production of Grease this summer. Costs will be \$1200, adults tickets will sell for \$5 and children tickets will sell for \$3.50. Write an equation for the amount of money they will collect from those who attend. Use our equation to find out how much money was collected if 208 adults and 156 students attend the production. ▪ What is the initial amount Aunt Mercedes would have to give Alfredo today at 7% compound interest in order for him to have \$2400 for his trip four years from now? ▪ A super ball bounces to 0.9 of the height it started from. How high would it be after its fifth bounce if you dropped it from a height of 6 feet? ▪ Determine an equation to represent Insulin Yield from two strains over a 48 hour period. Solve the system of equations to find the number of hours the yeast should be cultured so that both strains yield the same amount of insulin. Compare your above solution to the results you found graphically. Which method is more accurate? ▪ If you pull on the ends of a spring, the amount that a spring stretches varies directly as the force with which you pull. A particular spring stretched 1.28 inches when we hung a 32 pound weight on it. Find the constant of proportionality. How far would it stretch with a 50 pound weight? ▪ Use the given information in the problem to write an equation for the monthly profit for the Maine plant. Use y for the monthly profit, in dollars, and x for the number of desks produced.

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Number	Standard	Coverage	Sample Problems
10.P.8	Solve everyday problems that can be modeled using systems of linear equations or inequalities. Apply algebraic and graphical methods to the solution. Use technology when appropriate. Include mixture, rate and work problems.	Book 1a Sections: 2.4, Book 1b Sections: 5.3 – 5.7, 6.4, 6.5 Book 2b Sections: 6.2, 6.3	<ul style="list-style-type: none"> ▪ The Cheapo Rental Agency charges \$90 a week and 35 cents a mile and the Bargain Rental Agency charges \$142 a week and 10 cents a mile. Which agency has a better deal? Explain your answer. ▪ Use a graph to determine the coordinates of the point where each pair of lines intersects. ▪ Graph the equations you found for the total cost of rentals at Tommy Kaye’s and Shop Quick video rentals on one set of axis. Should the two graphs intersect? Find the point of intersection. What would this point represent? Under what conditions will the total cost at Tommy Kaye’s be less? More? Use your graph to explain the answers. ▪ For each strain of yeast cultures given in Display 5.26, use a graph to estimate the number of hours in which the two yeast cultures would produce the same amount of insulin. Then, find an equation that models each strain of yeast and solve this system of equations to find the exact number of hours in which the two yeast cultures would produce the same amount of insulin. Compare the graphical solution to the one from the system of equations. ▪ A catering company charges a fixed fee and then a charge per plate for each plate for each person who eats at the banquet. If it costs \$2,000 for 100 people and \$3,500 for 200 people, what is the fixed fee and the price per plate? ▪ A chemist has two solutions of sulfuric acid, one a 20% solution and the other a 50% solution. Unfortunately, his experiment requires a 40% mix. How many liters of each should he mix to produce 5 liters of 40% solution.

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Geometry

- Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.
- Specify locations and describe spatial relationships using coordinate geometry and other representational systems
- Apply transformations and use symmetry to analyze mathematical situations
- Use visualization, spatial reasoning, and geometric modeling to solve problems

Number	Standard	Coverage	Sample Problems
10.G.1	Identify figures using properties of sides, angles, and diagonals. Identify the figures' type(s) of symmetry	Book 2a Sections: 1.2, 1.3, 1.4	<ul style="list-style-type: none"> ▪ Using Display 1.26, find all quadrilaterals that have no congruent angles that have exactly one pair of congruent angles, that have two pair of congruent angles but not all four angles are congruent, that have all four angles congruent. ▪ Draw a rhombus that has four axes of symmetry. ▪ Is there a quadrilateral with exactly one axis of symmetry? ▪ Draw the axes of symmetry for each capital letter of the alphabet.
10.G.2	Draw congruent and similar figures using a compass, straightedge, protractor, and other tools such as computer software. Make conjectures about methods of construction. Justify the conjectures by logical arguments.	Book 2a Sections: 1.3, 1.7, 2.6	<ul style="list-style-type: none"> ▪ Given the length of a wobbit, construct a triangle with three lengths of 4 wobbits, 2 wobbits, and 3 wobbits. ▪ Construct a triangle congruent to the one in display 1.55. ▪ Draw a triangle which is equilateral with a perimeter of 21cm. ▪ Draw a triangle with two angles of 30 and 45 with the included side 5 cm long.
10.G.3	Recognize and solve problems involving angles formed by transversals of coplanar lines. Identify and determine the measure of central and inscribed angles and their associated major and minor arcs. Recognize and solve problems associated with radii, chords, and arcs within or on the same circle.	Book 2a Sections: 2.4 – 2.7 Book 2b Sections: 4.5, 4.6	<ul style="list-style-type: none"> ▪ Track problem, Section 4.5 ▪ Find the arc length L of a 54° arc of a circle (central angle measure) given the radius of the circle is 50.

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Number	Standard	Coverage	Sample Problems
10.G.4	Apply congruence and similarity correspondences (e.g., $\triangle ABC \cong \triangle XYZ$, $\triangle ABC \sim \triangle XYZ$) and properties of the figures to find missing parts of geometric figures, and provide logical justification.	Book 2a Sections: 2.2	<ul style="list-style-type: none"> ▪ If triangle 1 and triangle 2 are congruent, find the missing sides and the scaling factor between the two triangles. ▪ Draw a square to represent a major league diamond and then draw a proportional square representing a little league diamond. Use your calculator to find the proportional distance from the pitcher's mound to home plate in Little League, assuming that the two diamonds are in proportion.
10.G.5	Solve simple triangle problems using the triangle angle sum property and/or the Pythagorean theorem.	Book 2a Sections: 1.6, 1.8, 2.1, 2.5,3.5 Book 2b Sections: 5.5, 5.6	<ul style="list-style-type: none"> ▪ A right triangle has one side 27 yd. Long and a hypotenuse 40 yd. long. How long is the other side? Round your answer to one decimal place. Find the area and perimeter. ▪ A triangle in the coordinate plane has vertices (1,2), (7,10) and (26.2, - 4.4). Is it a right triangle? ▪ Apply the Pythagorean theorem to find the diagonal between (1,2,3) and (5,7,9). ▪ Calculate the height of the given pyramid.
10.G.6	Use the properties of special triangles (e.g., isosceles, equilateral, 30-60-90, 45-45-90) to solve problems.	Book 2a Sections: 3.1 – 3.3, 3.6 Book 2b Sections: 4.3, 4.5	<ul style="list-style-type: none"> ▪ Focus is on using calculator to solve problems set up for trig. Functions? ▪ Track problem, Section 4.5 ▪ Given a circle in the x-y plane, express x and y as a function of θ and calculate x and y if $\theta = 30$.
10.G.7	Using rectangular coordinates, calculate midpoints of segments, slopes of lines and segments, and distances between two points, and apply the results to the solutions of problems.	Book 2a Sections: 1.8 Book 2b Sections: 5.6, 5.7	<ul style="list-style-type: none"> ▪ Use the Pythagorean theorem to find the distance between the following pairs of points in the coordinate plane. ▪ Find the slope of the line (or line segment) through the ordered pairs (3, 6) and (1, 4). ▪ Find the distance between the points (2,1,1) and (3,8,5)
10.G.8	Find the linear equations that represent lines either perpendicular or parallel to a given line and through a point, e.g., by using the “point-slope” form of the equation.		<ul style="list-style-type: none"> ▪ <i>Ch. 3 focused on slope-intercept form. Rewriting standard or point-slope forms of linear equations into slope-intercept form was done for symbol manipulation practice and to graph the lines.</i>

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Number	Standard	Coverage	Sample Problems
10.G.9	Draw the results, and interpret transformations on figures in the coordinate plane, e.g., translations, reflections, rotations, scale factors, and the results of successive transformations. Apply transformations to the solutions of problems.	Book 2a Sections: 2.1, 2.2	<ul style="list-style-type: none"> ▪ The US Postal service is making commemorative ceramic tiles to display popular stamp designs. The tiles will be 6 inch squares. The stamps will be copied from and original size of 20 mm x 22 mm. Find the scaling factor to make the largest design possible on the tile. Round the final answer to the nearest tenth of an inch. ▪ Suppose you stretch the coordinates in a plane by 5 in the x direction and by 2 in the y direction. Will the distance between any two points in the plane stretch by a predictable amount?
10.G.10	Demonstrate the ability to visualize solid objects and recognize their projections and cross sections.	Book 2b Sections: 5.1, 5.2, 5.3, 5.4	<ul style="list-style-type: none"> ▪ A right prism with a square base of 6 inches per side has a vertical height of 15 inches. What is the volume? If an oblique prism making a 75° angle with its base plane also has a square base of 6 inches per side and vertical height of 15 inches, what is the volume (use Cavalieri's Principle)? ▪ Design as many connected cut-out patterns for a cube. ▪ Identify the three dimensional shape formed when the two-dimensional figure is "folded-up" as shown in Display 5.3. ▪ A hemisphere of radius 10 cm is placed flat side down. Next to it is an upward pointing cone with base radius and height both 10 cm. Make and compare contour maps for the cone and hemisphere. Complete the contour radius table (Display 5.24)
10.G.11	Use vertex-edge graphs to model and solve problems.	Book 2a Sections: 1.2	<ul style="list-style-type: none"> ▪ Using the map in Display 1.7, find the shortest polygonal path between Kansas City and Texarkana. Calculate the length in distance and in time.

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10.M.1	Calculate perimeter, circumference, and the area of common geometric figures such as parallelograms, trapezoids, circles and triangles.	Book 2a Sections: 1.2, 1.5, 1.6, 1.7, 1.9, 2.9 Book 2b Sections: 4.4, 4.5	<ul style="list-style-type: none"> ▪ Given the measurements of the walls and windows of a room, find the total wall area. If a gallon of paint covers 300 sq. feet, how many gallons are needed? ▪ Given the diagram of a rhombus, draw the diagonals and determine the area of each triangle. ▪ Construct a triangle of 8, 10, and 12 cm long. Construct the three altitudes. Measure the lengths of the altitudes and calculate the area of the triangle using each altitude. ▪ Calculate the area of the given polygon by dividing it into triangles and calculating the area of each triangle. ▪ A right triangle has one side 27 yards long and a hypotenuse 40 yards long. How long is the other side? Round your answer to one decimal place. Also find the area and perimeter
10.M.2	Given the formula, find the lateral area, surface area, and volume of prisms, pyramids, spheres, cylinders, and cones, e.g., find the volume of a sphere with a specified surface area.	Book 2a Sections: 1.10, 2.10 Book 2b Sections: 5.3, 5.4, 5.5	<ul style="list-style-type: none"> ▪ A 2.5 by 8 by 10 foot rectangular bin holds peanuts. What volume will the bin hold? If another bin is built enlarging the original dimensions by a factor of 3, what volume of peanuts will it hold? What are the new dimensions of the enlarged bin? ▪ Suppose a right prism is 6 cm high, and has a triangular base with sides 3, 4, 5 cm. Describe its upright sides and then find its total surface area and lateral surface area. ▪ Find the volume of a pyramid with a 3 by 4 by 5 cm triangular base and a height of 8 cm. ▪ What would be the radius of the base of a right cylinder if its height is 20 cm and its volume is 3000 cc?
10.M.3	Relate changes in the measurement of one attribute of an object to changes in other attributes, e.g., how changing the radius or height of a cylinder affects its surface area or volume.	Book 2a Sections: 1.10, 2.10 Book 2b Sections: 5.3, 5.4	<ul style="list-style-type: none"> ▪ Volume for a rectangular cake pan can be written as area of the base times the height. If the area of the bottom of the cake pan is 85 square inches, and the height is 1.5 inches, what is the volume for cake batter? How much does the volume increase if the height were doubled (3 inches)?
10.M.4	Describe the effects of approximate error in measurement and rounding on measurements and on computed values from measurements.		<ul style="list-style-type: none"> ▪ <i>Came up in class during measurement of figures activities and rounding of dimensions – discussed why classmates got different answers</i>

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Data Analysis, Statistics, and Probability

- Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them
- Select and use appropriate statistical methods to analyze data
- Develop and evaluate inferences and predictions that are based on data
- Understand and apply basic concepts of probability

Number	Standard	Coverage	Sample Problems
10.D.1	Select, create and interpret an appropriate graphical representation (e.g., scatterplot, table, stem-and-leaf plots, box-and-whisker plots, circle graph, line graph, and line plot) for a set of data and use appropriate statistics (e.g., mean, median, range, and mode) to communicate information about the data. Use these notions to compare different sets of data.	Book 1a Sections: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8	<ul style="list-style-type: none"> ▪ Using display 1.4, make a table showing the number of years each college won the championship and a bar graph of your table. ▪ Using the winning margins of each of your teams 10 games, list the frequency of each value, find the mean and mode, draw a dot plot, and describe in words what the mean represents. ▪ List the individual data items contained in the stem-and-leaf plot, find the mean, and make a histogram. ▪ Using the data in the display showing the number of moons of each planet, compute the mean, median and mode of the number of moons, make a dot plot of the data marking the mean and median, and explain which you are more comfortable using and explain why there is such a difference between the two results. ▪ Using display 1.41 showing boxplots of geese gaggle populations from 1988-1992, determine in which of these years did the largest median gaggle size occur, in which year was the largest gaggle born, in which year did the gaggles show the widest variation in size?
10.D.2	Approximate a line of best fit (trend line) given a set of data (e.g., scatterplot). Use technology when appropriate.	Book 1b Sections: 4.1, 4.2, 4.3, 4.4, 4.5	<ul style="list-style-type: none"> ▪ Using the chart showing the number of insurance policies written by HMI Co. from 1985 to 1992, make a scattergram (scatterplot) of the data. ▪ From the census data figures of 1840-1880, find formulas for estimating the population between 1840 and 1850, 1850 and 1860, 1860 and 1870 and 1870 and 1880. ▪ Consider the two variable data set where x represents the age of a child and y represents the height in centimeters, plot these points on a coordinate graph, use a ruler to draw a line that you think comes close to the data, use your calculator to find the least-squares line and compare your graph to that determined by the calculator.

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10.D.3	Describe and explain how the relative sizes of a sample and the population affect the validity of predictions from a set of data.	Book 1a Sections: 1.7	<ul style="list-style-type: none"> ▪ Find the variance and standard deviation of the Dallas Cowboys 1995 regular season point totals dividing by n. If you find the standard deviation and variance by dividing by $n-1$ will they increase or decrease? Do it and compare the difference. <p><i>This leads into the discussion of sample vs. population variance calculations and why to chose one measure over the other, based on the data sample, etc.</i></p>