# 8th Grade Algebra 1 Mathematics
## Poudre School District
## Pacing Overview

| Chapter 1: Solving Linear Equations |
|---|
| 17 Days<br>HS.A.CED.A.1, HS.A.CED.A.4*, HS.A.REI.A.1*, HS.A.REI.B.3 |

| Chapter 2: Graphing and Writing Linear Equations and Chapter 12: Data Analysis and Displays |
|---|
| 24 Days<br>8.F.A.3, 8.F.B.4, 8.SP.A.1*, HS.A.CED.A.2*, HS.A.CED.A.3, HS.A.REI.D.10, HS.F.IF.B.4, HS.F.IF.B.6, HS.S.ID.B.6a*, HS.S.ID.B.6b*, HS.S.ID.B.6c*, HS.S.ID.C.7*, HS.S.ID.C.8*, HS.S.ID.C.9* |

| Chapter 3: Solving Linear Inequalities |
|---|
| 12 Days<br>HS.A.CED.A.1, HS.A.CED.A.3, HS.A.REI.B.3, HS.A.REI.D.12 |

| Chapter 4: Solving Systems of Linear Equations |
|---|
| 13 Days<br>8.EE.C.8a*, 8.EE.C.8b*, 8.EE.C.8c*, HS.A.CED.A.3*, HS.A.REI.C.5*, HS.A.REI.C.6*, HS.A.REI.D.12* |

| Chapter 5: Linear Functions |
|---|
| 15 Days<br>8.F.A.1*, 8.F.A.3*, 8.F.B.4*, HS.F.IF.A.1*, HS.F.IF.A.2*, HS.F.IF.A.3, HS.F.IF.B.5*, HS.F.IF.C.7b, HS.F.BF.A.1a*, HS.F.BF.A.2, HS.F.BF.B.3, HS.F.LE.A.1b*, HS.F.LE.A.2 |

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Chapter 6: Exponential Equations and Functions |
|---|
| 20 Days<br>HS.N.RN.A.1*, HS.N.RN.A.2, HS.N.RN.B.3*, HS.A.SSE.A.1a, HS.A.SSE.A.1b*, HS.A.REI.B.3*, HS.A.REI.D.11, HS.F.IF.A.3*, HS.F.IF.C.7e*, HS.F.BF.A.2*, HS.F.BF.B.3, HS.F.LE.A.1a*, HS.F.LE.A.2* |

| Chapter 7: Polynomial Equations and Factoring |
|---|
| 18 Days<br>HS.A.SSE.A.1a*, HS.A.SSE.A.2, HS.A.SSE.B.3a*, HS.A.APR.A.1*, HS.A.REI.B.4b |

| Chapter 8: Graphing Quadratic Functions |
|---|
| 14 Days<br>HS.F.IF.B.4, HS.F.IF.B.6*, HS.F.IF.C.7a*, HS.F.BF.B.3*, HS.F.LE.A.3* |

| Chapter 9: Solving Quadratic Equations |
|---|
| 13 Days<br>HS.A.SSE.B.3b*, HS.A.REI.B.4a*, HS.A.REI.B.4b*, HS.A.REI.C.7*, HS.A.REI.D.11*, HS.F.IF.C.8a* |

| Chapter 10: Square Root Functions and Geometry |
|---|
| 12 Days<br>8.G.B.6*, 8.G.B.7*, 8.G.B.8*, HS.N.RN.A.2*, HS.F.IF.B.4*, HS.F.IF.C.7b* |

| Chapter 11: Rational Equations and Functions |
|---|
| Time Permitting<br>HS.A.SSE.A.2*, HS.A.CED.A.1*, HS.A.REI.D.10*, HS.F.BF.B.4a* |

# 8th Grade Algebra 1 Mathematics
## Poudre School District

**Review and Common Summative Assessment**

* Teaching is complete. Standard can be assessed.

Major Work of the Grade.
Supporting Work of the Grade.
Additional Work of the Grade.

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Chapter 1: Solving Linear Equations |
|---|
| 17 Days<br>HS.A.CED.A.1, HS.A.CED.A.4*, HS.A.REI.A.1*, HS.A.REI.B.3<br>*Labor Day September 4, MAPs Testing* |

| Chapter Summary | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| | Scavenger Hunt | | | 1 day | 1 day |
| 1.1 | Solving Simple Equations<br>*Examples 1, 2, 3 & 4* | Learning | HS.A.CED.A.1, HS.A.REI.A.1, HS.A.REI.B.3 | 2 days | 2 days |
| 1.2 | Solving Multi-Step Equations<br>*Examples 1, 2, 3 & 4* | Learning | HS.A.CED.A.1, HS.A.REI.A.1, HS.A.REI.B.3 | 2 days | |
| 1.3 | Solving Equations with Variables on Both Sides<br>*Examples 1, 2, 3 &4* | Learning | HS.A.CED.A.1, HS.A.REI.A.1*, HS.A.REI.B.3 | 1 day | 1 day |
| | Extension: Solving Absolute Value Equations<br>*Examples 1, 2 & 3* | | | 1 day | |
| 1.4 | Rewriting Equations and Formulas<br>*Examples 1, 2, 3 & 4* | Learning | HS.A.CED.A.4* | 1 day | 1 day |

Total: 8 days

*Note: Additional days reserved for review and assessment.*

| Additional Activities/Resources | |
|---|---|
| **Name** | **Location** |
| | |

| Vocabulary | | |
|---|---|---|
| absolute value equation | literal equation | power of a quotient property |

| Standards | |
|---|---|
| HS.A.CED.A.1 | Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions*. |
| HS.A.CED.A.4* | Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law V = IR to highlight resistance R*. |
| HS.A.REI.A.1* | Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. |
| HS.A.REI.B.3 | Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. |

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Chapter 2: Graphing and Writing Linear Equations and Chapter 12: Data Analysis and Displays |
|---|
| 18 Days<br>8.F.A.3, 8.F.B.4, 8.SP.A.1*, HS.A.CED.A.2*, HS.A.CED.A.3, HS.A.REI.D.10, HS.F.IF.B.4, HS.F.IF.B.6, HS.S.ID.B.6a*, HS.S.ID.B.6b*, HS.S.ID.B.6c*, HS.S.ID.C.7*, HS.S.ID.C.8*, HS.S.ID.C.9* |

| Chapter Summary | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| **Chapter 2: Graphing and Writing Linear Equations** | | | | | |
| | Chapter Opener | | | 1 day | |
| 2.1 | Graphing Linear Equations<br>*Activities 1 & 2*<br>*Examples 1, 2 & 3* | Learning | HS.A.CED.A.2, HS.A.REI.D.10 | 1 day | 1 day |
| 2.2 | Slope of a Line<br>*Activities 1 & 2*<br>*Examples 1, 2, 3 & 4* | Preparing for | HS.F.IF.B.4, HS.F.IF.B.6 | 1 day | |
| | Extension: Slopes of Parallel and Perpendicular Lines<br>*Examples 1 & 2* | | | 1 day | 1 day |
| 2.3 | Graphing Linear Equations in Slope-Intercept Form<br>*Activity 1*<br>*Examples 1b, 2 & 3* | Learning | HS.A.CED.A.2, HS.A.REI.D.10, HS.F.IF.B.4 | 2 days | |
| 2.4 | Graphing Linear Equations in Standard Form<br>*Activities 1 & 2*<br>*Examples 1, 2 & 3* | Learning | HS.A.CED.A.2, HS.A.REI.D.10, HS.F.IF.B.4 | 2 days | 1 day |
| 2.5 | Writing Equations in Slope-Intercept Form<br>*Activities 1, 2 & 3*<br>*Examples 1, 2 & 3* | Learning | 8.F.A.3, HS.A.CED.A.2, HS.A.CED.A.3 | 2 days | 1 day |

| Chapter Summary (continued) | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| 2.6 | Writing Equations in Point-Slope Form<br>*Activities 1, 2 & 3*<br>*Examples 1, 2 & 3* | Learning | HS.A.CED.A.2, HS.A.REI.D.10, HS.F.IF.B.4, HS.F.IF.B.6 | 2 days | 1 day |
| | Extension: Writing Equations of Parallel and Perpendicular Lines<br>*Examples 1 & 2* | | | 1 day | 1 day |
| 2.7 | Solving Real-Life Problems<br>*Activity 3*<br>*Examples 1 & 2* | Applying | 8.F.B.4, HS.A.CED.A.2*, HS.F.IF.B.4 | 1 day | |
| **Chapter 12: Data Analysis and Displays** | | | | | |
| 12.5 | Scatter Plots and Lines of Fit<br>*Activity 1*<br>*Examples 1, 2 & 3* | Learning | 8.SP.A.1*, HS.S.ID.B.6a*, HS.S.ID.B.6c*, HS.S.ID.C.7 | 2 days | 1 day |
| 12.6 | Analyzing Lines of Fit<br>*Activities 1, 2, 3 & 4*<br>*Examples 1, 2, 3 & 4* | Learning | HS.S.ID.B.6b*, HS.S.ID.C.7*, HS.S.ID.C.8*, HS.S.ID.C.9* | 2 days | 1 day |

Total: 18 days

*Note: Additional days reserved for review and assessment.*

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Additional Activities/Resources | |
|---|---|
| **Name** | **Location** |
| | |

| Vocabulary | | |
|---|---|---|
| causation | correlation coefficient | line of best fit |
| line of best fit | linear equation | linear regression |
| perpendicular lines | point-slope form | residual |
| rise | run | scatter plot |
| slope | slope-intercept form | solution of a linear equation |
| standard form | x-intercept | y-intercept |

| Standards | |
|---|---|
| 8.F.A.3 | Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.* |
| 8.F.B.4 | Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two $(x, y)$ values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. |
| 8.SP.A.1* | Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. |
| HS.A.CED.A.2* | Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. |
| HS.A.CED.A.3 | Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.* |
| HS.A.REI.D.10 | Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). |

| Standards (continued) | |
|---|---|
| HS.F.IF.B.4 | For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity*. |
| HS.F.IF.B.6 | Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. |
| HS.S.ID.B.6a* | Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models. |
| HS.S.ID.B.6b* | Informally assess the fit of a function by plotting and analyzing residuals. |
| HS.S.ID.B.6c* | Fit a linear function for a scatter plot that suggests a linear association. |
| HS.S.ID.C.7* | Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. |
| HS.S.ID.C.8* | Compute (using technology) and interpret the correlation coefficient of a linear fit. |
| HS.S.ID.C.9* | Distinguish between correlation and causation. |

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Chapter 3: Solving Linear Inequalities |
|---|
| 12 Days<br>HS.A.CED.A.1, HS.A.CED.A.3, HS.A.REI.B.3, HS.A.REI.D.12 |

| Chapter Summary | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| | Chapter Opener | | | 1 day | |
| 3.1 | Writing and Graphing Inequalities<br>*Activities 1, 2 & 3*<br>*Examples 1, 2 & 3* | Learning | HS.A.CED.A.1, HS.A.CED.A.3 | 2 days | 1 day |
| 3.2 | Solving Inequalities Using Addition or Subtraction<br>*Examples 1, 2 & 3* | Learning | HS.A.CED.A.1, HS.A.CED.A.3, HS.A.REI.B.3 | 2 days | 1 day |
| 3.3 | Solving Inequalities Using Multiplication or Division<br>*Examples 1, 2, 3 & 4* | Learning | HS.A.CED.A.1, HS.A.CED.A.3, HS.A.REI.B.3 | | |
| 3.4 | Solving Multi-Step Inequalities<br>*Activities 1, 2 & 3*<br>*Examples 1, 2, 3 & 4* | Learning | HS.A.CED.A.1, HS.A.CED.A.3, HS.A.REI.B.3 | 2 days | 1 day |
| | Extension: Solving Compound Inequalities<br>*Examples 1, 2, 3, 4, 5 & 6* | | | 1 day | 1 day |
| 3.5 | Graphing Linear Inequalities in Two Variables<br>*Examples 1, 2, 3 & 4* | Learning | HS.A.REI.D.12 | 1 day | |

Total: 9 days

*Note: Additional days reserved for review and assessment.*

| Additional Activities/Resources | |
|---|---|
| **Name** | **Location** |
| | |

| Vocabulary | | |
|---|---|---|
| absolute value inequality | compound inequality | graph of an inequality |
| graph of a linear inequality | half-planes | inequality |
| linear inequality in two variables | solution of an inequality | solution of a linear inequality |
| solution set | | |

| Standards | |
|---|---|
| HS.A.CED.A.1 | Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions*. |
| HS.A.CED.A.3 | Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods*. |
| HS.A.REI.B.3 | Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. |
| HS.A.REI.D.12 | Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. |

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Chapter 4: Solving Systems of Linear Equations |
|---|
| 13 Days<br>8.EE.C.8a*, 8.EE.C.8b*, 8.EE.C.8c*, HS.A.CED.A.3*, HS.A.REI.C.5*, HS.A.REI.C.6*, HS.A.REI.D.12* |

| Chapter Summary | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| | Chapter Opener | | | 1 day | |
| 4.1 | Solving Systems of Linear Equations by Graphing<br>*Activities 1, 2 & 3*<br>*Examples 1 & 2* | Learning | 8.EE.C.8a, 8.EE.C.8b, 8.EE.C.8c, HS.A.CED.A.3, HS.A.REI.C.6 | 2 days | 1 day |
| 4.2 | Solving Systems of Linear Equations by Substitution<br>*Activities 1 & 2*<br>*Example 2* | Learning | 8.EE.C.8b, 8.EE.C.8c, HS.A.CED.A.3, HS.A.REI.C.6 | 1 day | 1 day |
| 4.3 | Solving Systems of Linear Equations by Elimination<br>*Activity 1*<br>*Examples 1, 2 & 3* | Learning | 8.EE.C.8b, 8.EE.C.8c, HS.A.CED.A.3, HS.A.REI.C.5*, HS.A.REI.C.6 | 1 day | |
| 4.4 | Solving Special Systems of Linear Equations<br>*Activities 1 & 2*<br>*Examples 1 & 2* | Learning | 8.EE.C.8a*, 8.EE.C.8b*, 8.EE.C.8c*, HS.A.CED.A.3, HS.A.REI.C.6* | 1 day | 1 day |
| | Extension: Solving Linear Equations by Graphing<br>*Examples 1 & 2* | | | 1 day (skip) | |
| 4.5 | Systems of Linear Inequalities<br>*Examples 1, 2, 3, 4 & 5* | Learning | HS.A.CED.A.3*, HS.A.REI.D.12* | 2 days | 1 day |

Total: 9 days

*Note: Additional days reserved for review and assessment.*

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Additional Activities/Resources | |
|---|---|
| **Name** | **Location** |
| | |

| Vocabulary | | |
|---|---|---|
| graph of a system of linear inequalities | solution of a system of linear equations | solution of a system of linear inequalities |
| system of linear equations | system of linear inequalities | |

| Standards | |
|---|---|
| 8.EE.C.8a* | Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. |
| 8.EE.C.8b* | Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.* |
| 8.EE.C.8c* | Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.* |
| HS.A.CED.A.3* | Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.* |
| HS.A.REI.C.5* | Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. |
| HS.A.REI.C.6* | Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. |
| HS.A.REI.D.12* | Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. |

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Chapter 5: Linear Functions |
|---|
| 15 Days<br>8.F.A.1*, 8.F.A.3*, 8.F.B.4*, HS.F.IF.A.1*, HS.F.IF.A.2*, HS.F.IF.A.3, HS.F.IF.B.5*, HS.F.IF.C.7b, HS.F.BF.A.1a*, HS.F.BF.A.2, HS.F.BF.B.3, HS.F.LE.A.1b*, HS.F.LE.A.2 |

| Chapter Summary | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| | Chapter Opener | | | 1 day | |
| 5.1 | Domain and Range of a Function<br>*Activities 1 & 2*<br>*Examples 1, 2 & 3* | Learning | 8.F.A.1, HS.F.IF.A.1, HS.F.IF.B.5 | 2 days | 1 day |
| | Extension: Relations and Functions<br>*Examples 1 & 2* | | | | |
| 5.2 | Discrete and Continuous Domains<br>*Activity 2*<br>*Examples 1, 2 & 3* | Learning | 8.F.A.1*, HS.F.IF.A.1, HS.F.IF.B.5 | 1 day | 1 day |
| 5.3 | Linear Function Patterns<br>*Activity 1 & 2*<br>*Examples 1, 2 & 3* | Learning | 8.F.A.3, 8.F.B.4*, HS.F.BF.A.1a*, HS.F.LE.A.2 | 2 days | |
| 5.4 | Function Notation<br>*Activities 1, 2 & 3*<br>*Examples 2, 3, 4 & 5* | Learning | HS.F.BF.B.3, HS.F.IF.A.1*, HS.F.IF.A.2*, HS.F.IF.C.7b | 2 days | 1 day |
| | Extension: Special Functions<br>*Examples 1, 2, 3, 4 & 5* | | | 2 days | 1 day |
| 5.5 | Comparing Linear and Nonlinear Functions<br>*Activities 1 & 2*<br>*Examples 1, 2, 3 & 4* | Learning | 8.F.A.3*, HS.F.LE.A.1b* | 2 days | 1 day |

| Unit Summary (continued) | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| 5.6 | Arithmetic Sequences<br>*Activity 1*<br>*Examples 1, 2, 3 & 4* | Learning | HS.F.BF.A.2, HS.F.IF.A.3, HS.F.LE.A.2 | 1 day | 1 day |

Total: 13 days

*Note: Additional days reserved for review and assessment.*

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Additional Activities/Resources | |
|---|---|
| **Name** | **Location** |
| | |

| Vocabulary | | |
|---|---|---|
| absolute value function | arithmetic sequence | common difference |
| continuous domain | dependent variable | discrete domain |
| domain | function | function notation |
| independent variable | linear function | nonlinear function |
| piecewise function | range | relation |
| sequence | step function | term (of a sequence) |
| Vertical Line Test | | |

| Standards | |
|---|---|
| 8.F.A.1* | Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. |
| 8.F.A.3* | Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.* |
| 8.F.B.4* | Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two $(x, y)$ values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. |
| HS.F.IF.A.1* | Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If $f$ is a function and $x$ is an element of its domain, then $f(x)$ denotes the output of corresponding to the input $x$. The graph of $f$ is the graph of the equation $y = f(x)$. |
| HS.F.IF.A.2* | Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. |
| HS.F.IF.A.3 | Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. *For example, the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1, f(n+1) = f(n) + f(n-1)$ for $n \geq 1$.* |

| Standards (continued) | |
|---|---|
| HS.F.IF.B.5* | Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.* |
| HS.F.IF.C.7b | Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. |
| HS.F.BF.A.1a* | Determine an explicit expression, a recursive process, or steps for calculation from a context. |
| HS.F.BF.A.2 | Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms. |
| HS.F.BF.B.3 | Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k\,f(x)$, $f(kx)$, and $f(x + k)$ for specific values of $k$ (both positive and negative); find the value of $k$ given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. |
| HS.F.LE.A.1b* | Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. |
| HS.F.LE.A.2 | Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). |

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Chapter 6: Exponential Equations and Functions |
|---|
| 20 Days<br>HS.N.RN.A.1*, HS.N.RN.A.2, HS.N.RN.B.3*, HS.A.SSE.A.1a, HS.A.SSE.A.1b*, HS.A.REI.B.3*, HS.A.REI.D.11, HS.F.IF.A.3*, HS.F.IF.C.7e*, HS.F.BF.A.2*, HS.F.BF.B.3, HS.F.LE.A.1a*, HS.F.LE.A.2* |

| Chapter Summary | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| | Chapter Opener | | | 1 day | |
| 6.1 | Properties of Square Roots<br>*Activity 2*<br>*Examples 1, 2, 3 & 4* | Learning | HS.N.RN.B.3* | 2 days | 1 day |
| | Extension: Real Number Operations<br>*Activities 1, 2, 3 & 4* | | | 1 day (skip) | |
| 6.2 | Properties of Exponents<br>*Activities 1, 2, 3, 4 & 5*<br>*Examples 1, 2, 3 & 4* | Learning | HS.N.RN.A.2 | 2 days | 1 day |
| 6.3 | Radicals and Rational Exponents<br>*Examples 1, 2, 3 & 4* | Learning | HS.N.RN.A.1*, HS.N.RN.A.2 | 1 day | 1 day |
| 6.4 | Exponential Functions<br>*Activities 1 & 2*<br>*Examples 1, 2, 3, 4 & 5* | Learning | HS.A.REI.B.3*, HS.A.REI.D.11, HS.F.BF.B.3, HS.F.IF.C.7e, HS.F.LE.A.1a*, HS.F.LE.A.2 | 2 days | |
| | Extension: Solving Exponential Equations<br>*Examples 1 & 2* | | | 1 day (skip) | 1 day |
| 6.5 | Exponential Growth<br>*Activity 2*<br>*Examples 1, 2 & 3* | Learning | HS.A.SSE.A.1a, HS.A.SSE.A.1b, HS.F.IF.C.7e | 1 day | |

| Chapter Summary (continued) | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| 6.6 | Exponential Decay<br>*Activity 2*<br>*Examples 1, 2 & 3* | Learning | HS.A.SSE.A.1a, HS.A.SSE.A.1b*, HS.F.IF.C.7e* | 1 day | 1 day |
| 6.7 | Geometric Sequences<br>*Activity 2*<br>*Examples 1, 2 & 3* | Learning | HS.F.BF.A.2*, HS.F.IF.A.3*, HS.F.LE.A.2* | 1 day | |
| | Extension: Recursively Defined Sequences<br>*Examples 1, 2, 3, 4 & 5* | | | 2 days (skip) | 1 day |

Total: 15 days

*Note: Additional days reserved for review and assessment.*

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Additional Activities/Resources | |
|---|---|
| **Name** | **Location** |
| | |

| Vocabulary | | |
|---|---|---|
| closed | common ratio | compound interest |
| exponential decay | exponential decay function | exponential growth function |
| geometric sequence | $n^{th}$ root | recursive rule |

| Standards | |
|---|---|
| HS.N.RN.A.1* | Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. *For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5^{(1/3)3}$ to hold, so $(5^{1/3})^3$ must equal 5.* |
| HS.N.RN.A.2 | Rewrite expressions involving radicals and rational exponents using the properties of exponents. |
| HS.N.RN.B.3* | Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational. |
| HS.A.SSE.A.1a | Interpret parts of an expression, such as terms, factors, and coefficients. |
| HS.A.SSE.A.1b* | Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P.* |
| HS.A.REI.B.3* | Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. |
| HS.A.REI.D.11 | Explain why the $x$-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. |
| HS.F.IF.A.3* | Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. *For example, the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1, f(n+1) = f(n) + f(n-1)$ for $n \geq 1$.* |
| HS.F.IF.C.7e* | Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude. |

| Standards (continued) | |
|---|---|
| HS.F.BF.A.2* | Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms. |
| HS.F.BF.B.3 | Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k\,f(x)$, $f(kx)$, and $f(x + k)$ for specific values of $k$ (both positive and negative); find the value of $k$ given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. |
| HS.F.LE.A.1a* | Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. |
| HS.F.LE.A.2* | Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). |

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Chapter 7: Polynomial Equations and Factoring |
|---|
| 18 Days<br>HS.A.SSE.A.1a*, HS.A.SSE.A.2, HS.A.SSE.B.3a*, HS.A.APR.A.1*, HS.A.REI.B.4b |

| Chapter Summary | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| | Chapter Opener | | | 1 day | |
| 7.1 | Polynomials<br>*Activity 2*<br>*Examples 1, 2 & 3* | Applying | HS.A.SSE.A.1a* | 1 day | 1 day |
| 7.2 | Adding and Subtracting Polynomials<br>*Activities 1, 2, 3 & 4*<br>*Examples 1, 2, 3 & 4* | Learning | HS.A.APR.A.1 | 2 days | |
| 7.3 | Multiplying Polynomials<br>*Activities 1, 2 & 3*<br>*Examples 1, 2, 3, 4 & 5* | Learning | HS.A.APR.A.1 | 2 days | 1 day |
| 7.4 | Special Products of Polynomials<br>*Activities 1, 2, 3 & 4*<br>*Examples 1, 2 & 3* | Learning | HS.A.APR.A.1* | 2 days | 1 day |
| 7.5 | Solving Polynomials Equations in Factored Form<br>*Activities 2 & 3*<br>*Examples 1, 2 & 3* | Learning | HS.A.REI.B.4b | 1 day | 1 day |
| 7.6 | Factoring Polynomials Using the GCF<br>*Examples 1, 2 & 3* | Learning | HS.A.REI.B.4b, HS.A.SSE.B.3a | 1 day | |
| 7.7 | Factoring $x^2 + bx + c$<br>*Examples 1, 2, 3 & 4* | Learning | HS.A.REI.B.4b, HS.A.SSE.B.3a | 1 day | 1 day |
| 7.8 | Factoring $ax^2 + bx + c$<br>Examples 1, 2, 3 & 4 | Learning | HS.A.REI.B.4b, HS.A.SSE.B.3a | 1 day | |

| Chapter Summary (continued) | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| 7.9 | Factoring Special Products<br>*Examples 1, 2 & 3* | Learning | HS.A.REI.B.4b, HS.A.SSE.A.2, HS.A.SSE.B.3a* | 1 day | 1 day |
| | Extension: Factoring Polynomials Completely<br>*Examples 1, 2 & 3* | | | 2 days | |

Total: 15 days

*Note: Additional days reserved for review and assessment.*

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Additional Activities/Resources | |
|---|---|
| **Name** | **Location** |
| | |

| Vocabulary | | |
|---|---|---|
| binomial | degree of a monomial | degree of a polynomial |
| factored completely | factored form | factoring by grouping |
| FOIL Method | monomial | polynomial |
| prime polynomial | roots | trinomial |
| Zero-Product Property | | |

| Standards | |
|---|---|
| HS.A.SSE.A.1a* | Interpret parts of an expression, such as terms, factors, and coefficients. |
| HS.A.SSE.A.2 | Use the structure of an expression to identify ways to rewrite it. *For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.* |
| HS.A.SSE.B.3a* | Factor a quadratic expression to reveal the zeros of the function it defines. |
| HS.A.APR.A.1* | Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. |
| HS.A.REI.B.4b | Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers $a$ and $b$. |

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Chapter 8: Graphing Quadratic Functions |
|---|
| 13 Days<br>HS.F.IF.B.4, HS.F.IF.B.6*, HS.F.IF.C.7a*, HS.F.BF.B.3*, HS.F.LE.A.3* |

| Chapter Summary | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| | Chapter Opener | | | 1 day | |
| 8.1 | Graphing $y = ax^2$<br>*Activities 1 & 2*<br>*Examples 1, 2, 3 & 4* | Learning | HS.F.BF.B.3 | 2 days | 1 day |
| 8.2 | Focus of a Parabola<br>*Examples 1, 2 & 3* | Learning | HS.F.IF.B.4 | 1 day | |
| 8.3 | Graphing $y = ax^2 + c$<br>*Activities 1 & 2*<br>*Examples 1, 2, 3 & 4* | Learning | HS.F.BF.B.3 | 2 days | 1 day |
| 8.4 | Graphing<br>$y = ax^2 + bx + c$<br>*Examples 1, 2, 3 & 4* | Learning | HS.F.BF.B.3*,<br>HS.F.IF.B.4,<br>HS.F.IF.C.7a | 1 day | 1 day |
| | Extension:<br>Graphing<br>$y = a(x - h)^2 + k$<br>*Examples 1, 2 & 3* | | | 1 day | |
| 8.5 | Comparing Linear, Exponential, and Quadratic Functions<br>*Activities 1 & 2*<br>*Examples 1, 2 & 3* | Learning | HS.F.IF.B.4,<br>HS.F.IF.B.6*,<br>HS.F.IF.C.7a*,<br>HS.F.LE.A.3* | 2 days | 1 day |
| | Extension:<br>Comparing Graphs of Functions<br>Activities 1 & 2 | | | 1 day | |

Total: 11 days

*Note: Additional days reserved for review and assessment.*

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Additional Activities/Resources | |
|---|---|
| **Name** | **Location** |
| | |

| Vocabulary | | |
|---|---|---|
| axis of symmetry | focus | maximum value |
| minimum value | parabola | quadratic function |
| vertex (of a parabola) | vertex form | zero (of a function) |

| Standards | |
|---|---|
| HS.F.IF.B.4 | For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity*. |
| HS.F.IF.B.6* | Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. |
| HS.F.IF.C.7a* | Graph linear and quadratic functions and show intercepts, maxima, and minima. |
| HS.F.BF.B.3* | Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k\,f(x)$, $f(kx)$, and $f(x + k)$ for specific values of $k$ (both positive and negative); find the value of $k$ given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. |
| HS.F.LE.A.3* | Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function. |

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Chapter 9: Solving Quadratic Equations |
|---|
| 13 Days<br>HS.A.SSE.B.3b*, HS.A.REI.B.4a*, HS.A.REI.B.4b*, HS.A.REI.C.7*, HS.A.REI.D.11*, HS.F.IF.C.8a* |

| Chapter Summary | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| | Chapter Opener | | | 1 day | |
| 9.1 | Solving Quadratic Equations by Graphing<br>*Activities 1 & 2*<br>*Examples 1, 2, 3 & 4* | Learning | HS.A.REI.B.4b, HS.A.REI.D.11* | 2 days | 1 day |
| 9.2 | Solving Quadratic Equations Using Square Roots<br>*Examples 1, 2 & 3* | Learning | HS.A.REI.B.4b | 1 day | |
| 9.3 | Solving Quadratic Equations by Completing the Square<br>*Examples 1, 2 & 3* | Learning | HS.A.REI.B.4a, HS.A.REI.B.4b, HS.A.SSE.B.3b*, HS.F.IF.C.8a* | 1 day | 1 day |
| 9.4 | Solving Quadratic Equations Using the Quadratic Formula<br>*Activities 1, 2 & 3*<br>*Examples 1, 2, 3 & 4* | Learning | HS.A.REI.B.4a*, HS.A.REI.B.4b* | 2 days | |
| | Extension: Choosing a Solution Method<br>*Examples 1, 2 & 3* | | | 1 day | 1 day |
| 9.5 | Solving Systems of Linear and Quadratic Equations<br>*Activities 1 & 2*<br>*Examples 1, 2 & 3* | Learning | HS.A.REI.C.7* | 2 days | |

Total: 10 days

*Note: Additional days reserved for review and assessment.*

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Additional Activities/Resources | |
|---|---|
| **Name** | **Location** |
| | |

| Vocabulary | | |
|---|---|---|
| completing the square | discriminant | quadratic equation |
| quadratic formula | | |

| Standards | |
|---|---|
| HS.A.SSE.B.3b* | Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. |
| HS.A.REI.B.4a* | Use the method of completing the square to transform any quadratic equation in $x$into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form. |
| HS.A.REI.B.4b* | Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers $a$ and $b$. |
| HS.A.REI.C.7* | Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$. |
| HS.A.REI.D.11* | Explain why the $x$-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. |
| HS.F.IF.C.8a* | Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. |

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Chapter 10: Square Root Functions and Geometry |
|---|
| 12 Days<br>8.G.B.6*, 8.G.B.7*, 8.G.B.8*, HS.N.RN.A.2*, HS.F.IF.B.4*, HS.F.IF.C.7b* |

| Chapter Summary | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| | Chapter Opener | | | 1 day | |
| 10.1 | Graphing Square Root Functions<br>*Examples 1, 2, 3 & 4* | Learning | HS.F.IF.B.4*, HS.F.IF.C.7b* | 1 day | 1 day |
| | Extension: Rationalizing the Denominator<br>*Examples 1, 2 & 3* | | | 1 day | |
| 10.2 | Solving Square Root Equations<br>*Activity 1*<br>*Examples 1, 2, 3, 4 & 5* | Applying | HS.N.RN.A.2* | 2 days | 1 day |
| 10.3 | The Pythagorean Theorem<br>*Activities 1, 2 & 3*<br>*Examples 1, 2 & 3* | Learning | 8.G.B.6, 8.G.B.7 | 2 days | 1 day |
| 10.4 | Using the Pythagorean Theorem<br>*Activity 3*<br>*Examples 1, 2 & 3* | Learning | 8.G.B.6*, 8.G.B.7*, 8.G.B.8* | 1 day | |

Total: 8 days

*Note: Additional days reserved for review and assessment.*

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Additional Activities/Resources | |
|---|---|
| **Name** | **Location** |
| | |

| Vocabulary | | |
|---|---|---|
| conjugates | distance formula | extraneous solution |
| hypotenuse | legs | Pythagorean Theorem |
| rationalizing the denominator | simplest form of a radical | square root equation |
| square root function | theorem | |

| Standards | |
|---|---|
| 8.G.B.6* | Explain a proof of the Pythagorean Theorem and its converse. |
| 8.G.B.7* | Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. |
| 8.G.B.8* | Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. |
| HS.N.RN.A.2* | Rewrite expressions involving radicals and rational exponents using the properties of exponents. |
| HS.F.IF.B.4* | For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.* |
| HS.F.IF.C.7b* | Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. |

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Chapter 11: Rational Equations and Functions |
|---|
| As Time Permits<br>HS.A.SSE.A.2*, HS.A.CED.A.1*, HS.A.REI.D.10*, HS.F.BF.B.4a* |

| Chapter Summary | | | | | |
|---|---|---|---|---|---|
| **Section** | **Title** | **Level of Learning** | **Standard(s)** | **Pacing (every/every other)** | |
| | Chapter Opener | | | 1 day | |
| 11.1 | Direct and Inverse Variation<br>*Activities 1 & 2*<br>*Examples 1, 2, 3 & 5* | Learning | HS.A.REI.D.10 | 2 days | 1 day |
| 11.2 | Graphing Rational Functions<br>*Activities 1, 2 & 3*<br>*Examples 1, 2, 3, 4 & 5* | Learning | HS.A.REI.D.10*, HS.F.BF.B.4a* | 2 days | 1 day |
| | Extension: Inverse of a Function<br>*Examples 1 & 2* | | | 1 day | 1 day |
| 11.3 | Simplifying Rational Expressions<br>*Examples 1, 2 & 3* | Learning | HS.A.SSE.A.2 | 1 day | |
| 11.4 | Multiplying and Dividing Rational Expressions<br>Examples 1, 2 & 3 | Learning | HS.A.SSE.A.2 | 1 day | 1 day |
| 11.5 | Dividing Polynomials<br>*Examples 1, 2, 3 & 4* | Learning | HS.A.SSE.A.2 | 1 day | |
| 11.6 | Adding and Subtracting Rational Expressions<br>*Examples 1, 2, 3, 4 & 5* | Learning | HS.A.SSE.A.2* | 1 day | 1 day |
| 11.7 | Solving Rational Equations<br>*Examples 1, 2 & 3* | Applying | HS.A.CED.A.1* | 1 day | |

Total: 11 days

*Note: Additional days reserved for review and assessment.*

# 8th Grade Algebra 1 Mathematics
## Poudre School District

| Additional Activities/Resources | |
|---|---|
| **Name** | **Location** |
| | |

| Vocabulary | | |
|---|---|---|
| asymptote | direct variation | excluded value |
| inverse function | inverse function | inverse relation |
| inverse variation | least common denominator (LCD) of rational expressions | rational equation |
| rational expression | rational function | simplest form of a rational expression |

| Standards | |
|---|---|
| HS.A.SSE.A.2* | Use the structure of an expression to identify ways to rewrite it. *For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.* |
| HS.A.CED.A.1* | Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.* |
| HS.A.REI.D.10* | Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). |
| HS.F.BF.B.4a* | Solve an equation of the form f(x) = c for a simple function f that has an inverse and write an expression for the inverse. *For example, $f(x) = 2x^3$ or $f(x) = (x+1)/(x-1)$ for $x \neq 1$.* |