

Excellent

Students at this achievement level generally have exhibited the ability to

1. choose a level of accuracy for a given set of measurements relative to content-appropriate limitations;
2. interpret the meaning of *average rate of change* over a specific time interval in applied contexts* from verbal statements or graphs;
3. graph and compare two functions to determine the meaning of intersection points, intercepts, and slopes, relative to applied contexts;
4. determine the effect on a graph of replacing $f(x)$ with $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$;
5. analyze and interpret key features such as maxima and minima of non-linear functions;
6. simplify polynomials in applied contexts;
7. explain how changes to a graph or changes to the data affect the equation of the line of best fit in an applied context;
8. in applied contexts, create and/or graph inequalities in two variables;
9. given a line of best fit for a data set, write the equation of the line and/or interpret the slope or intercept; and
10. analyze and explain any errors in the steps used to solve a system of equations.

Good

Students at this achievement level generally have exhibited the ability to

1. distinguish between causation and correlation in applied contexts that can be represented by linear models;
2. interpret and describe relationships between quantities on a scatter plot in applied contexts;
3. identify the domain of a function from a list, table, or graph in an applied context;
4. rearrange a formula by solving for a specific variable;
5. interpret and analyze applied contexts modeled by tables, graphs, equations, or verbal statements representing linear and non-linear functions;
6. write linear equations and inequalities in one variable to interpret and solve problems in applied contexts;
7. identify and interpret the slope and intercepts of a linear function modeled by a table, equation, or verbal statement;
8. create and interpret systems of equations that represent applied contexts;
9. graph inequalities in one variable in applied contexts;
10. analyze and use appropriate units of measure or scales in applied contexts; and
11. interpret, rewrite, and simplify algebraic expressions.

Fair

Students at this achievement level generally have exhibited the ability to

1. recognize a linear correlation or causation on a scatter plot;
2. interpret and analyze data represented in a histogram;
3. interpret the information in a graph, table, or function in order to identify, model, or predict input/output in applied contexts;
4. create a linear inequality in one variable to represent a relationship in an applied context;
5. select the appropriate unit of measure and scale for applied contexts;
6. represent data with plots on a number line; and
7. interpret the meaning of the x -intercept, y -intercept, or slope of a linear function given a graph.

Needs Improvement

Students at this achievement level are generally working toward the ability to

1. create a linear inequality in one variable to represent a relationship in an applied context;
2. represent data with plots on a number line;
3. select the appropriate unit of measure and scale for applied contexts; and
4. interpret and analyze data represented in a histogram.

* The term “applied contexts” refers to problems where a mathematical process or concept is embedded in a concrete, real-world situation. Applied contexts allow students to demonstrate their ability to use mathematical knowledge and skills in practical problem-solving situations.