Includes two FREE practice tests!

Peoples Algebra 1

Guided Review and Practice for Essential Algebra 1 Skills

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Table of Contents

Letter to Students v

Letter to Parents and Families vi

What's Ahead vii

Pretest . . . . . (Teacher Edition)

Your teacher may choose to assign the pretest to diagnose your Algebra 1 proficiency and direct you to help in this worktext.

Chapter 1 Number Sense and Operations

Lesson

1 Reasoning with Real Numbers 1
Focus: Rational and irrational numbers, and their properties

2 Using Ratios and Rates 5
Focus: Dimension analysis and derived measures

3 Using Ratios and Proportions 9
Focus: Similar figures, scale drawings, map scales, dilations

Extended–Response Practice 1 13

4 Using Numerical Exponential Expressions 14
Focus: Applying the laws of exponents to whole and rational numbers

5 Using Numerical Radical Expressions (Part 1) 18
Focus: Arithmetic of expressions involving square roots

6 Using Numerical Radical Expressions (Part 2) 22
Focus: Rewriting and simplifying radical expressions, including rationalizing the denominator

Extended–Response Practice 2 26

Chapter 2 Algebraic Expressions

Lesson

7 Using Algebraic Exponential Expressions 27
Focus: Applying the laws of exponents to algebraic expressions

8 Operating with Polynomial Expressions 31
Focus: Adding, subtracting, and multiplying polynomial expressions

9 Factoring Polynomial Expressions (Part 1) 35
Focus: Factoring out GCFs of polynomial expressions

Extended–Response Practice 3 39

10 Factoring Polynomial Expressions (Part 2) 40
Focus: Factorial trinomials with leading coefficient of 1

SAMPLE

Chapter 2 Algebraic Expressions *continued*

Lesson

11 Factoring Polynomial Expressions (Part 3) 44
Focus: Factoring more complicated polynomial expressions, e.g., trinomials with leading coefficient greater than 1

12 Using Algebraic Radical Expressions 48
Focus: Rewriting radical expressions by taking square roots, including correct use of absolute value

Extended–Response Practice 4 52

Chapter 3 Linear Functions

Lesson

13 Representing Linear Functions in Multiple Ways 53
Focus: Translating among words, tables, numerical patterns, graphs, and equations

14 Lines and Slope 57
Focus: Introducing slope, intercept, and basic graphing

15 Analyzing Linear Functions 61
Focus: How slope relates to parallel and perpendicular lines; writing equations of lines given points, slopes, etc.

Extended–Response Practice 5 65

16 Graphing Linear Functions Involving Absolute Value (Part 1) 66
Focus: Understanding absolute value and applying it to the equation $y = |x|$

17 Graphing Linear Functions Involving Absolute Value (Part 2) 70
Focus: Understanding and graphing more complicated linear absolute-value equations

18 Using Linear Models 74
Focus: Applying slope, intercept, and linear equations to real-world phenomena

Extended–Response Practice 6 78

Chapter 4 Linear Equations and Inequalities

Lesson

19 Solving Linear Equations 79
Focus: Solving linear equations of the form $ax + b = c$

20 Solving Linear Inequalities. 83
Focus: Solving linear inequalities, including the use of a number line

21 Solving Equations Involving Absolute Value 87
Focus: Determining all solutions of equations of the form $|x + a| = b$ *and other forms*

22 Graphing Linear Inequalities 91
Focus: Two-variable inequalities on a coordinate plane

Extended–Response Practice 7 95

SAMPLE

Chapter 4 Linear Equations and Inequalities *continued*

Lesson

23 Solving Systems of Linear Equations 96
Focus: Algebraic methods

24 Modeling with Linear Equations 100
Focus: Real-world problems that can be modeled using single-variable equations

25 Modeling with Systems of Equations 104
Focus: Real-world problems that can be modeled using systems of equations

26 Modeling with Systems of Equations and Inequalities 108
Focus: Real-world problems that can be modeled using systems of equations and inequalities

Extended–Response Practice 8 112

Chapter 5 Nonlinear Relationships

Lesson

27 Representing Quadratic Functions (Part 1) 113
Focus: Analyzing and graphing quadratic equations of the form $y = ax^2 + b$

28 Representing Quadratic Functions (Part 2) 117
Focus: Analyzing and graphing quadratic equations of the form $y = ax^2 + bx + c$

29 Representing Exponential Functions 121
Focus: Understanding linear, quadratic, and exponential functions

30 Using Quadratic Models 125
Focus: Recognize and solve problems that can be modeled using a quadratic function

Extended–Response Practice 9 129

31 Solving Literal Equations 130
Focus: Solve equations involving several variables for one variable in terms of the others

32 Solving Quadratic Equations (Part 1) 134
Focus: Solving equations of the form $ax^2 = b$

33 Solving Quadratic Equations (Part 2) 138
Focus: Using factoring techniques to solve quadratic equations

Extended–Response Practice 10 142

SAMPLE

Chapter 6 Data, Statistics, and Probability

Lesson

34 Interpreting Linear Trends in Data 143
Focus: Scatter plots, correlation, and lines of best fit

35 Comparing Data Using Summary Statistics 147
Focus: Measures of central tendency, range, and outliers

36 Evaluating Data-Based Reports in the Media. 151
Focus: Bias, misleading data displays, and randomness

Extended–Response Practice 11 155

37 Using Counting Principles 156
Focus: The counting principle

38 Determining Probability 160
Focus: Single-stage and double-stage probabilities in practical situations

Extended–Response Practice 12 164

Posttest. . . . . (Teacher Edition)

Your teacher may choose to assign the posttest for this program.

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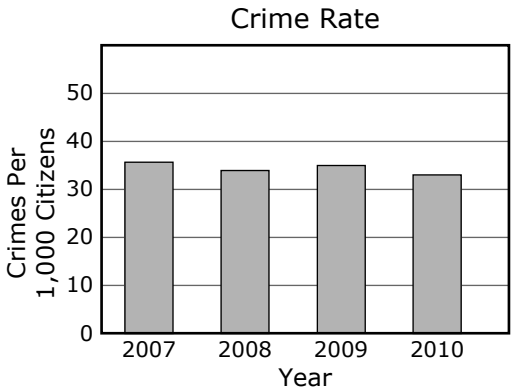
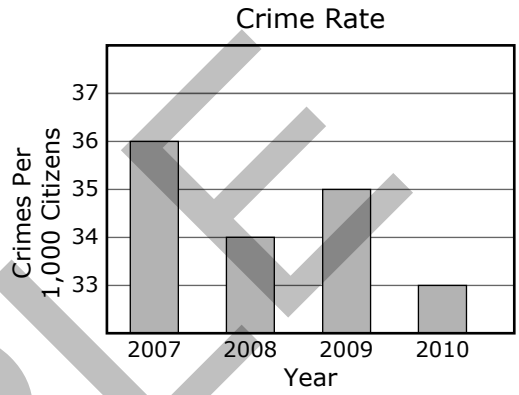
There are several ways to make graphs that emphasize differences in data.

Guided Practice

Problem 1 Mayor Smith is running for a second 4-year term against Vicky Garcia. Which graph do you think Mayor Smith would use to show that the crime rate went down dramatically? Which graph do you think Vicky Garcia would use to show that the decrease in the crime rate was not very dramatic? Explain your reasoning.



Graph 1



Graph 2

Step 1 Look at the vertical scales of the graphs.
The vertical scale on both graphs shows crimes per 1,000 citizens. On Graph 1, the vertical scale starts at 0 and shows 0, 10, 20, 30, 40, and 50. On Graph 2, the vertical scale starts at 33 and shows 33, 34, 35, 36, and 37. That has the effect of making the changes in the crime rate look more dramatic on Graph 2.

Step 2 Decide which graph Mayor Smith would use and which graph Vicky Garcia would use.

Mayor Smith is more likely to use Graph _____.

Vicky Garcia is more likely to use Graph _____.

Solution So Mayor Smith is more likely to use Graph 2; the scale on the vertical axis leaves out some numbers and the increments are smaller. Vicky Garcia is more likely to use Graph 1; the scale on the vertical axis does not leave out any numbers and the increments are larger.

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Additional Problems

Problem 2

Rich and Leslie are each planning to survey students in their school about food in the school cafeteria.

- Rich plans to survey 20 of his friends.
- Leslie plans to select a sample of 20 students as follows: she will write the names of all the students in the school on slips of paper, put the slips of paper in a box, mix the slips, and select 20 names without looking.

Which sample is a random sample of the students in the school?

Step 1 Analyze the way Rich's sample will be selected.

The students who are Rich's friends may not be representative of the students in the school. For example, a much greater percent of them may dislike the food in the cafeteria than in the school as a whole. Rich's sample is not a random sample.

Step 2 Analyze the way Leslie's sample will be selected.

Leslie's sample is more likely to be representative of the students in the school because each student is equally likely to be selected. Leslie's sample is a random sample.

Solution So Leslie's sample is a random sample of the students.

Problem 3

A survey asked voters this question the week before they voted:
Do you plan, like many other people, to vote Yes on the ballot measure to raise taxes to pay for new libraries?
Is that question likely to produce accurate information about what voters are going to do?
If not, what would be a better question to ask?

Step 1 Analyze the question.

The question is a leading question. It is phrased in such a way that people may be more likely to answer "Yes." It is not likely to produce accurate information about what voters are going to do.

Step 2 State a better question to ask.

Possible better question: Do you plan to vote Yes or No on the ballot measure to raise taxes to pay for new libraries?

Solution So the question is not likely to produce accurate information about what voters are going to do. This would be a better question to ask: Do you plan to vote Yes or No on the ballot measure to raise taxes to pay for new libraries?

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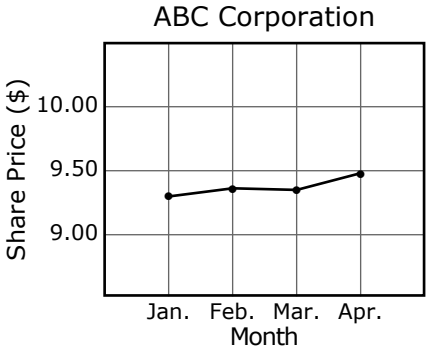
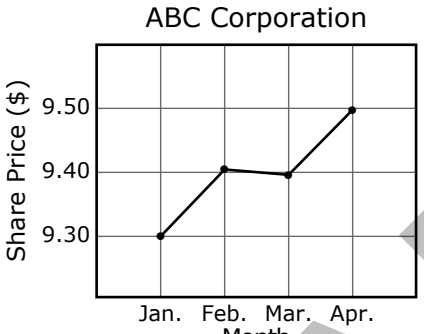
Test Practice

DIRECTIONS Read each question. Then circle the letter for the correct answer.

1. The graphs below show the price of shares in ABC Corporation on the first day of each of the first 4 months of the year.



Graph 1



Graph 2

Which graph emphasizes the increase in the price of the shares more?

A. Graph 1

B. Graph 2

C. Both graphs emphasize the increase in the price equally.

D. Neither graph emphasizes the increase in the price.

2. Sarah plans to survey 50 students in her school about the amount of homework that teachers should assign. Which sample is most likely to be representative of the students in the school?

A. A group of 50 freshmen that she knows.

B. A group of 50 students who play football.

C. A random sample of 50 students in the school.

D. A group of 50 seniors who are planning to go to college.

3. Which question is the best question to use to find out what people think about the level of pay for city council members?

A. The mayor says that pay for city council members is too high. Do you agree?

B. Do you agree that pay for city council members is about right?

C. Most people think that pay for city council members is too low. Do you agree?

D. Do you think that pay for city council members is lower than it should be, higher than it should be, or about right?

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Test Practice: Cumulative

DIRECTIONS Read each question. Then circle the letter for the correct answer.

4. The ages of a group of 5 friends are 23, 27, 26, 20, and 25. How would the mean and median ages of the group change if the person who is 20 leaves the group?

A. The mean will increase and the median will decrease.

B. The mean will decrease and the median will increase.

C. The mean and the median will both increase.

D. The mean and the median will both decrease.

5. You are going to do a survey to find out how people are going to vote for mayor. Which question is the best question to use?

A. You don't plan to vote for Mayor Smith, do you?

B. Who do you plan to vote for, Mayor Smith or Ms. Garcia?

C. Some people think that Ms. Garcia is pretty radical. Do you plan to vote for her?

D. Who do you plan to vote for, our beloved mayor or Ms. Garcia?

SHORT RESPONSE

6. You are going to do a survey to estimate the number of students who might attend a school musical this year.

Part A Describe how you would select a sample to survey 60 students. The sample should be one that is likely to be representative.

Part B Write a question that is likely to produce accurate information about which students in the sample might attend.

7. A car passes you on the highway. A minute later, it is 400 feet ahead of you. On the average, how much faster is it traveling than you are, in miles per hour? Round your answer to the nearest tenth of a mile per hour. Show or explain your work.

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Extended-Response Practice 11

Ms. Kim's and Mr. Feinberg's classes took the same test. The mean score of the 20 students in Ms. Kim's class was 75. The mean score of the 25 students in Mr. Feinberg's class was 80.

Part A Find the sum of the students' scores in Ms. Kim's class. Show or explain your work.

Part B Find the sum of the students' scores in Mr. Feinberg's class. Show or explain your work.

Part C Find the mean score for all the students. Round to the nearest tenth. Show or explain your work.

Part D Find the average (mean) of the mean scores of the two classes, 75 and 80. Is it the same as the mean score for all the students? Show or explain your work.

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