

PREPARING YOUR CHILD FOR THE

COLORADO STUDENT  
ASSESSMENT PROGRAM

GRADES 6, 7, AND 8  
MATHEMATICS

A  
BOOKLET  
FOR  
PARENTS

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# Introduction

The Colorado Student Assessment Program (CSAP) has been underway since 1997. The purpose of this test is to give parents and teachers information about how well students are achieving the *Colorado Model Content Standards*, better known as the state standards.

Research studies show that parent involvement in their child's education is extremely important in helping students do well in school. One way of being involved is to support your child throughout the school year, as well as, at testing time.

The following pages include information on the Mathematics test in **sixth, seventh, and eighth** grade. Also included are the CSAP test format, sample test items, and ways in which families can help their children to prepare for the CSAP in mathematics.

We hope the information in this booklet is helpful. We encourage you to communicate often with your child's teachers and principal to continue to support your child's education.

## The Colorado Student Assessment Program (CSAP)

### Purpose for CSAP Testing

The purpose of the Colorado Student Assessment Program (CSAP) is to give information to parents and teachers about how well students are achieving the state standards.

**CSA Administration Schedule  
2001-2002**

Grade 3	Reading, Writing
Grade 4	Reading, Writing
Grade 5	Reading, Writing, Mathematics
Grade 6	Reading, Writing, Mathematics
Grade 7	Reading, Writing, Mathematics
Grade 8	Reading, Writing, Mathematics, Science
Grade 9	Reading, Writing, Mathematics
Grade 10	Reading, Writing, Mathematics
Grade 11	ACT

**Reporting to Parents**

The results of the student's performance on the CSAP are reported to parents with four performance levels in each subject area:

- Advanced
- Proficient
- Partially Proficient
- Unsatisfactory

## Sixth, Seventh, and Eighth Grade Mathematics

### Test Construction Information

#### Grade 6 - 8

60 items – 45 multiple choice, 15 constructed response

Constructed response

- 3 are extended constructed response worth 4 pts
- 6 are medium constructed response worth 3 pts
- 6 are short constructed response worth 2 pts

Multiple choice score points – 45 or 52% of total

Constructed response score points – 42 or 48% of total

Test is designed to be given in three 55-minute sessions (an extra 10 minutes is allowed)

- Each session has a similar composition of items types
- Calculators are not used on the 6 –8 grade CSAP Mathematics test

### Weighting of Standards by Grade Level for Mathematics CSAP

	Grade 5	Grade 6	Grade7	Grade 8	Grade 9	Grade10
Standard	% Scorepoints	% Scorepoints	% Scorepoints	% Scorepoints	% Scorepoints	% Scorepoints
1	20	20	30	25	20	20
6	20	15				
2	20	20	20	25	30	30
3	20	20	20	20	25	25
4 and 5	20	25	30	30	25	25

## WHAT SKILLS WILL BE ASSESSED ON THE SIXTH GRADE CSAP MATHEMATICS TEST?

### **STANDARD 1:**

**Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.**

1.1a Locate commonly used positive rational numbers\* including terminating decimals through hundredths, fractions (halves, thirds, fourths, fifths, eighths, and tenths), mixed numbers, and percents on a number line.

1.1b Use physical materials or pictures to demonstrate the meaning and equivalence of fractions, decimals and/or percents (Example: Write the fraction, decimal, and percent value for the shaded portion of a partially shaded circle.)

1.2a Read, write, order and compare common fractions, decimals, and percents in a variety of forms.

1.3a Identify and use the concepts of factor, multiple, prime, composite, and square numbers.

1.3b Describe numbers by characteristics (divisibility, even, odd, prime, composite, square)

1.4a Demonstrate equivalence relationships among fractions, decimals, and percents in problem solving situations (for example, two students out of eight is the same as 25%).

1.5a Develop, test, and explain conjectures about properties of numbers (associative, commutative, identity, distributive multiplicative property of zero on whole and rational numbers).

1.6a Use number sense to estimate, determine, and justify the reasonableness of solutions involving whole numbers, decimals, and common fractions (only sums and differences for fractions and decimals.) For example: Is  $\frac{1}{2} + \frac{1}{3}$  closer to 0,  $\frac{1}{2}$ , or 1?

### **Standard 2:**

**Students use algebraic methods to explore, model and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.**

2.1a Represent, describe, and analyze geometric and numeric patterns using tables, words, symbols, concrete objects, or pictures.

2.1b Use a variable to represent an unknown (letter, box, symbol)

2.2a Solve problems by representing and analyzing patterns using tables, words, concrete objects, symbols or pictures.

2.3a Predict and describe how a change in one quantity results in a change in another quantity in a linear relationship (for example, A creature gains 3 oz. a day, how much will it have gained over 10 days?)

2.4a Explain whether data presented in a chart or graph is changing at a constant rate.

2.5a Solve problems using tables, concrete objects, or pictures involving linear relationships with whole numbers.

### **Standard 3:**

**Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning and processes used in solving these problems.**

3.1a Organize and construct a line graph, bar graph, and frequency table from a given set of data.

3.1b. Read, interpret and draw conclusions from a line graph, bar graph, circle graph and frequency table.

3.2a Find and use measures of central tendency including mean, median, and mode.

3.2b Find and use the range from a given set of data (for example, find the range from 2 to 12. Note: Range is 10).

3.4a Analyze data and draw conclusions to predict outcomes based on data displays such as line graphs, bar graphs, or frequency tables.

3.6a Using a chance device, such as a number cube or spinner, design a fair game and an unfair game, and explain why they are fair and unfair respectively.

3.6b Make predictions based on data obtained from simple probability experiments.

3.6c Describe an event as likely or unlikely and explain the degree of likelihood using words such as certain, very likely, not likely, or impossible.

3.7a Determine the number of possible outcomes for simple events using a variety of methods such as: organized lists or tree diagrams.

### **Standard 4:**

**Students use geometric concepts, properties, and relationships in problem-solving situations and communicate the reasoning used in solving these problems.**

4.2a Identify, compare, and analyze the attributes of two and three-dimensional shapes and develop vocabulary to describe these attributes (for example, acute, obtuse, right angle, parallel lines, perpendicular lines, intersecting lines, and line segments).

4.2b Make and test conjectures about geometric relationships and develop logical arguments to justify conclusions.

4.4a Plot points on a coordinate graph in quadrant 1.

- 4.4b Draw a graph (in quadrant 1) from a given scenario or table.
- 4.5a Solve problems involving the perimeter of polygons
- 4.5b Solve problems involving areas of polygons (square, rectangle, parallelogram, rhombus, triangle)
- 4.6a Identify congruent shapes using reflections, rotations, and translations.
- 4.6b Show lines of symmetry on a two-dimensional figure.

**Standard 5:**

**Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning involved in solving these problems.**

- 5.1a Determine the appropriate unit of measure, metric and customary, when estimating distance, capacity, and weight.
- 5.1b Estimate and use standard and/or metric units for length, weight and temperature.
- 5.1c Estimate the area of a polygon.
- 5.2a Estimate, make and use direct and indirect measurements to describe and make comparisons.
- 5.3a Read and interpret scales on number lines, graphs, and maps.
- 5.3b Select an appropriate scale for a given problem (for example, using the appropriate scale when setting up a graph or determining the order of numbers on a number line).
- 5.4a Use formulas and/or procedures to solve problems involving the perimeter of a polygon.
- 5.4b Use formulas and/or procedures to solve problems involving the area of squares, rectangles, parallelograms, rhombus, and triangles.
- 5.5a Demonstrate how changing one of the dimensions of a rectangle or triangle affect its perimeter and area using concrete materials or graph paper.

**Standard 6:**

**Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning involved in solving these problems.**

6.1a Use concrete materials or pictures, to determine commonly-used percentages (for example, 25%, 50%) in problem solving situations.

6.2a Demonstrate conceptual meaning of addition and subtraction of fractions and decimals, in problem solving situations.

6.2b Use and explain strategies to add/subtract decimals and fractions in problem solving situations (common fractions with like and unlike denominators, mixed numbers, and decimals to thousandth).

6.2c Find equivalent representations by decomposing and composing whole numbers [For example,  $48 \times 12 = (48 \times 10) + (48 \times 2)$ ]

6.2d Demonstrate proficiency with the four basic operations using whole numbers.

6.3a Develop, apply and explain a variety of different estimation strategies in problem solving situations and explain why an estimate may be acceptable in place of an exact answer.

6.3a Develop, apply and explain a variety of different estimation strategies in problem solving situations and explain why an estimate may be acceptable in place of an exact answer.

6.4a Apply appropriate computation methods to solve problems involving whole numbers, common fractions, and decimals (use only addition and subtraction of fractions and decimals.)

6.4b In a problem solving situation, determine whether the results are reasonable and justify those results with accurate computation.

## Glossary Supplement

**Associative property** - the operation  $*$  illustrates the associative property:  $x * (y * z) = (x * y) * z$ . Real numbers are associative under the operations of addition,  $x + (y + z) = (x + y) + z$ , and under multiplication,  $x \cdot (y \cdot z) = (x \cdot y) \cdot z$ .

**Categorical data or variables** - variables that place individuals into groups or categories, such as gender, color, or college major. These are labels that can be used to sort individuals but cannot be used for arithmetical operations.

**Commutative property** - the operation  $\theta$  illustrates the commutative property:  $x \theta y = y \theta x$ . Real numbers are commutative under the operations of addition,  $x + y = y + x$ , and under multiplication,  $x \cdot y = y \cdot x$ .

**Identity element** - the operation  $\diamond$  illustrates the identity element as follows:  $x \diamond I = I \diamond x = x$ . In the real number system, 0 is the identity element for addition,  $x + 0 = 0 + x = x$ , and 1 is the identity element for multiplication,  $x \cdot 1 = 1 \cdot x = x$ .

**Numerical (quantitative) data or variables** - variables that have numbers associated with them, such as height, weight, or annual income. Arithmetic operations can be performed on the values of these variables.

**\*Note:** The definitions for all other words designated with an asterisk (\*) in this document may be found in the glossary of the Colorado Model Content Standards for Mathematics.

## WHAT SKILLS WILL BE ASSESSED ON THE SEVENTH GRADE CSAP MATHEMATICS TEST?

### **Standard 1:**

**Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.**

1.1a Recognize and use equivalent representations of positive rational numbers

1.1b Use models to represent integers

1.1c Use exponents to indicate how many times a base is used as a factor for positive integers

1.2a Read, write, order and compare positive rational numbers and integers.

1.2b Locate positive rational numbers and integers on a number line

1.3a Describe numbers by their characteristics (for example, even, odd, prime, composite, divisibility, square)

1.4a Use the relationships among fractions, decimals, and percents including the concepts of ratio and proportion in problem solving situations.

1.6a Estimate, solve and justify the reasonableness of solutions to problems involving positive rational numbers or integers.

### **Standard 2:**

**Students use algebraic methods to explore, model and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.**

2.1a Represent, describe, and analyze numeric or geometric patterns involving common positive rational numbers or integers using tables, graphs, rules, or symbols.

2.2a Solve problems by representing and analyzing patterns involving positive rational numbers or integers using tables, graphs, or rules.

2.3a Predict and describe how a change in one quantity results in a change in another quantity in a linear relationship.

2.5a Solve simple linear equations in problem solving situations using a variety of methods (informal, formal, or graphic).

2.5b Translate written words to algebraic expressions/equations and conversely, algebraic expressions/equations to words.

**Standard 3:**

**Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning and processes used in solving these problems.**

3.1a Construct a histogram or stem and leaf from a set of given data.

3.1b Read, interpret and draw conclusions from histograms, circle graphs, stem and leaf plots, and scatter plots.

3.2a Given a display of data (for example, line plot, stem and leaf plot, list of data), determine the mean, mode, median and range.

3.3a Evaluate arguments that are based on measures of central tendency or data displays.

3.4a Analyze data and draw conclusions to predict future outcomes based on data displays such as histograms and stem and leaf plots.

3.6a Report the probability of an event in fraction, decimal and percent form.

3.6b Determine the probability of simple independent events (for example, tossing a coin and rolling a die).

3.6c Make predictions based on theoretical probability.

3.7a Determine the number of possible outcomes for a given event using a variety of strategies, such as: tree diagrams, or organized lists.

**Standard 4:**

**Students use geometric concepts, properties, and relationships in problem-solving situations and communicate the reasoning used in solving these problems.**

4.2a Describe, analyze and reason informally about the attributes of two- and three-dimensional shapes. (for example, angles, sides, edges, faces, vertices)

4.3 Applying the concept of ratio, proportion, and similarity\* in problem-solving situations.

4.3a Identify and compare similar shapes using ratio, proportion, or scale factor.

4.4a Construct a coordinate graph and plot ordered integer pairs in all four quadrants.

4.5a Solve problems involving the circumference of a circle (formulas not provided)

4.5b Solve problems involving the areas of circles, triangles, and parallelograms (formulas not provided)

4.5c Solve problems involving the surface area of rectangular prisms (formulas not provided)

4.6a Use reflections, translations, and/or rotations, to determine congruence between figures

**Standard 5:**

**Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning involved in solving these problems.**

5.2a Estimate, make and use direct and indirect measurements to describe and make comparisons.

5.3a Read and interpret scales on number lines, graphs, and maps (for example, given a map and a scale, determine the distance between two points on the map).

5.3b Select the appropriate scale for a given problem (for example, using the appropriate scale when setting up a graph or intervals on a histogram).

5.4a Develop and use procedures or formulas to solve problems involving area of polygons (for example, trapezoids, regular hexagons, regular octagons)

5.5a Describe how a change in an object's linear dimensions affects its perimeter and area (for example, how a change in the radius or diameter will affect the circumference and area of a circle).

5.6a Select and use appropriate units and tools to measure to the degree of accuracy required in a particular problem-solving situation (for example, reconstruct a replica of a given figure).

**Standard 6:**

**Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning involved in solving these problems.**

6.1a Use concrete materials or pictures to explain how ratios, proportion, and percents can be used to solve real world problems.

6.2a Apply order of operations (including exponents) with positive rational numbers

6.2b Add, subtract, multiply, and divide positive rational numbers or integers.

6.2c Explain strategies to add, subtract and multiply positive rational numbers.

6.3a Explain why an estimate may be acceptable in place of an exact answer.

6.3b Solve problems using estimation and justify choice of techniques.

6.4a Determine what information is necessary or missing in a problem solving situation.

6.4b Solve problems involving positive rational numbers and/or integers

6.4c Create a situation that matches a given number sentence involving positive rational numbers or integers, excluding division of fractions and decimals.

6.4d Justify the reasonableness of a solution in a problem solving situation.

## WHAT SKILLS WILL BE ASSESSED ON THE EIGHTH GRADE CSAP MATHEMATICS TEST?

### **Standard 1:**

**Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.**

1.1a Recognize and use equivalent representations of rational numbers and common irrational numbers (for example, locate rational numbers on a number line and demonstrate the meaning of square roots and perfect squares).

1.2a Compare and order sets of integers and rational numbers that are expressed in a variety of ways.

1.3a Apply number theory concepts (for example, primes, factors, multiples, exponents) in problem-solving situations.

1.4a Use the relationships among fractions, decimals and percents, including the concepts of ratio and proportion in problem -solving situations (similarity, scale factor, unit rate).

1.5a Develop and test conjectures about properties of integers (Does  $3 - 5 = 5 - 3$ ?) and rational numbers.

1.6a Use number sense to estimate and justify the reasonableness of solutions to problems involving integers and rational numbers.

### **Standard 2:**

**Students use algebraic methods to explore, model and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.**

2.1a Represent, describe, and analyze patterns (for example, geometric and numeric) and relationships using tables, graphs, verbal rules, and standard algebraic notation.

2.1b Convert from one functional representation (table, graph, verbal rule, standard algebraic notation) to another.

2.2a Describe patterns using variables, expressions, equations, and inequalities in problem solving situations.

2.3a Analyze functional relationships to explain how a change in one quantity results in a change in another (for example, how a person's height changes over time).

2.4a Distinguish between linear and nonlinear functions\* through informal investigations.

2.5a Solve simple linear equations in problem-solving situations using a variety of methods (informal, formal, and graphic).

**Standard 3:**

**Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning and processes used in solving these problems.**

3.1a Read and construct displays of data using appropriate techniques (for example, circle graphs, scatter plots\*, box and whisker plots\*, stem-and-leaf plots).

3.2a Display and use measures of central tendency\*, (such as mean median and mode) and measures of variability\*, (such as range and quartiles) in problem solving situations.

3.3a Analyze a graph, table, or summary for misleading characteristics.

3.3b Recognize the misuse of statistical data in written arguments.

3.3c Describe how data can be interpreted in more than one way or be used to support more than one position in a debate.

3.4a Formulate hypotheses, draw conclusions, and make convincing arguments based on data analysis.

3.6a Use a model (list, tree diagram, area model) to determine theoretical probabilities to solve problems involving uncertainty.

3.6b Make predictions using theoretical probability in real-world problems.

3.7a Use a model or counting technique to determine all the possible outcomes from an experiment (for example, the number of ways students can line up to have their picture taken).

**Standard 4:**

**Students use geometric concepts, properties, and relationships in problem-solving situations and communicate the reasoning used in solving these problems.**

4.2a Describe, analyze and reason informally about the properties (for example, parallelism, perpendicularity, congruence, and similarity) of two- and three-dimensional figures.

4.3a Apply the concept of ratio, proportion, and similarity\* in problem-solving situations.

4.4a Solve problems in real-world situations using coordinate geometry (for example, maps, distance on a number line).

4.5a Solve problems involving perimeter and area in two dimensions, and involving surface area and volume\* in three dimensions. (include right prisms and cylinders).

4.5b Apply the Pythagorean Theorem to solve real-world problems.

4.6a Transform geometric figures using reflections, translations, and rotations to determine congruence.

**Standard 5:**

**Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning involved in solving these problems.**

- 5.1a Estimate, and use measures of, area, volume, capacity\* weight and angle comparisons to solve problems.
- 5.2a Estimate, make, and use direct and indirect measurements to describe and make comparisons (for example, use a proportion to find the height of a flagpole).
- 5.3a Read and interpret scales on number lines, graphs, and maps. (for example, given a map and a scale, determine the distance between two points on the map).
- 5.4a Develop and use formulas and procedures to solve problems involving measurement (for example, distance, area, surface area, and volume of right prisms and cylinders).
- 5.5a Describe how a change in an object's linear dimensions affects its perimeter, area and volume (for example, how the area of a circle changes as the radius increases).

**Standard 6:**

**Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning involved in solving these problems.**

- 6.1a Use models to explain how ratios, proportions, and percents can be used to solve real-world problems.
- 6.1b Convert from one set of units to another using proportions.
- 6.4a Apply computational methods (including ratio and proportion) to solve problems involving commonly used fractions, decimals, percents, and integers (for example, discount, tax, sale price, unit price) and determine whether the results are reasonable.
- 6.2a Apply order of operations to evaluate simple expressions with integers.

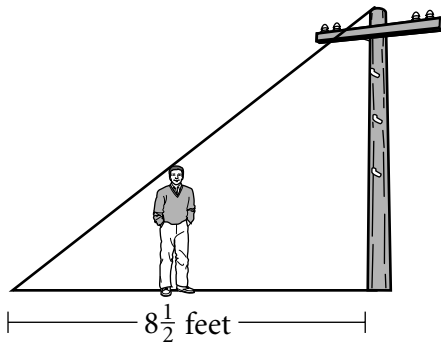
- 1** Jeff wants to wrap ribbon around a package, as shown below. He also needs 10 more inches of ribbon to tie a bow.



How much ribbon does he need to wrap the package and to tie the bow?

- 34 inches
- 48 inches
- 50 inches
- 58 inches

- 7 Lloyd is standing near a telephone pole as shown in the figure below. When his head touches the support wire, he is  $2\frac{1}{2}$  feet from where the wire meets the ground. If Lloyd is 5 feet tall, how tall is the telephone pole?



- 15 feet
- 17 feet
- 20 feet
- 80 feet

# CSAP Grade 8

## Mathematics

- 9** Each month, Jean's phone company charges her \$10.00 for the first 30 minutes of phone calls and \$0.25 for each additional minute.

*Part A* Use the information above to help you complete this table.

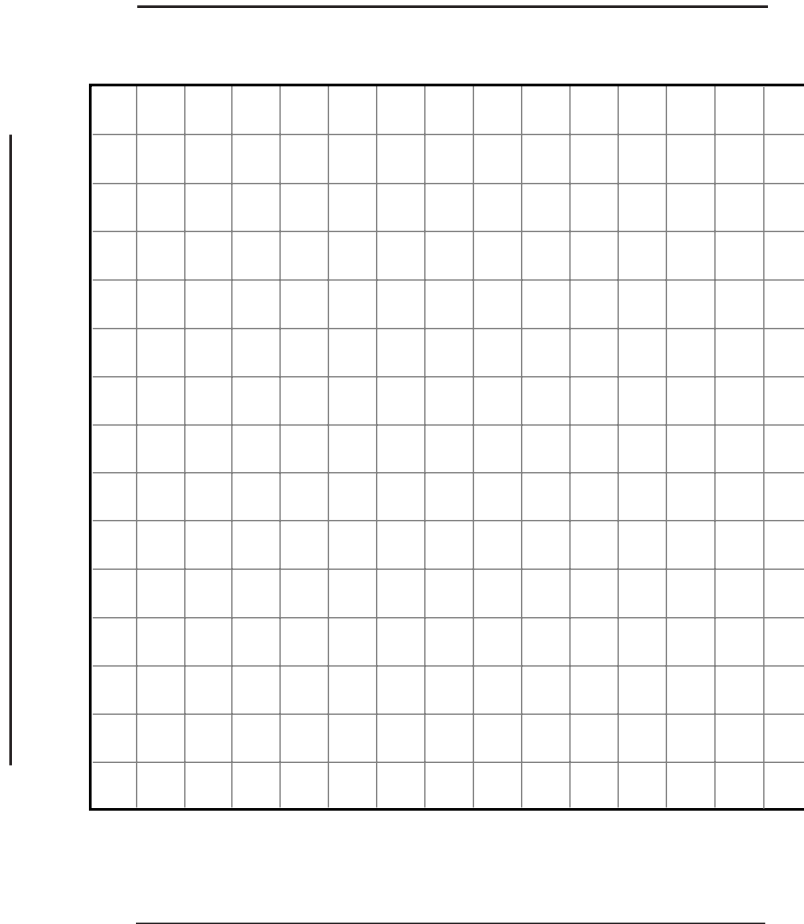
JEAN'S CALLS

Number of Minutes	30	35	40	45	50	55
Total Bill						

**Part B** On the grid below, construct a graph showing the cost of Jean's phone calls.

Be sure to

- title your graph
- label each axis

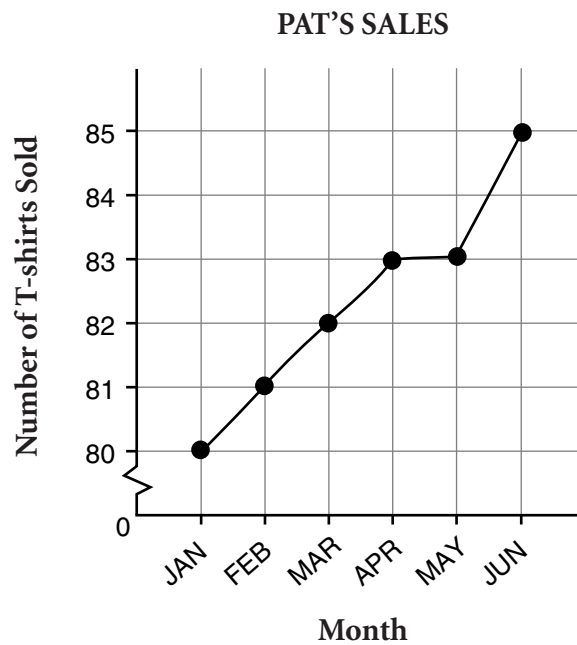


**Part C** What is Jean's phone bill if she uses her phone for 100 minutes? In the space below, explain or show how you found your answer and write your answer on the line.

\$ \_\_\_\_\_

**Part D** In the space below, write a rule or equation showing how Jean can find her total bill each month.

- 14** Pat was planning to ask her boss for a raise. She made the graph below to show her boss the increase in her T-shirt sales.



Her boss said that the graph was misleading and that Pat’s sales did not improve very much. On the lines below, explain how the graph is misleading.

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misleading—giving the wrong idea

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## 4 - Point Rubric for Extended Constructed-Response Items

This rubric is used to score students' responses to extended constructed-response items. These items require the student to use problem-solving skills that may require the construction of a graph or a model, the extension of a pattern, or the use of geometric relationships and spatial reasoning. These items may also include an explanation of reasoning, evaluation of methods, or application to real-world situations.

There are several extended constructed-response items in CSAP, each taking approximately 15 minutes to complete. Each extended constructed-response item receives a single score of 0, 1, 2, 3 or 4 points.

### 4 Points

The response accomplishes the prompted purpose and effectively communicates the student's mathematical understanding. The student's strategy and execution meet the content (including concepts, technique, representations, and connections), thinking processes and qualitative demands of the task. Minor omissions may exist, but do not detract from the correctness of the response.

### 3 Points

The response provides adequate evidence of the learning and strategic tools necessary to complete the prompted purpose. It may contain overlooked issues, misleading assumptions, and/or errors in execution. Evidence in the response demonstrates that the student can revise the work to accomplish the task with the help of written feedback. The student does not need a dialogue or additional instructions.

### 2 Points

The response partially completes the task, but lacks adequate evidence of the learning and strategic tools that are needed to accomplish the prompted purpose. It is not clear that the student is ready to revise the work without more instruction.

### 1 Point

The response demonstrates some evidence of mathematical knowledge that is appropriate to the intent of the prompted purpose. An effort was made to accomplish the task, but with little success. Minimal evidence in the response demonstrates that with instruction the student can revise the work to accomplish the task.

### 0 Points

The response lacks any evidence of mathematical knowledge that is appropriate to the intent of the task.

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## **3 - Point Rubric for Medium Constructed-Response Items**

This rubric is used to score students' responses to medium constructed-response items. These items require the student to use problem-solving skills that may require the construction of a graph or a model, the extension of a pattern, or the use of geometric relationships and spatial reasoning. These items may also include an explanation of reasoning, evaluation of methods, or application to real-world situations. There are several medium constructed-response items in CSAP, each taking approximately 10 minutes to complete. Each extended constructed-response item receives a single score of 0, 1, 2, or 3 points.

### **3 Points**

The response accomplishes the prompted purpose and effectively communicates the student's mathematical understanding. The student's strategy and execution meet the content (including concepts, technique, representations, and connections), thinking processes and qualitative demands of the task. Minor omissions may exist, but do not detract from the correctness of the response.

### **2 Points**

The response demonstrates adequate evidence of the learning and strategic tools necessary to complete the prompted purpose. It may contain overlooked issues, misleading assumptions, and/or errors in execution. Evidence in the response demonstrates that the student can revise the work to accomplish the task with the help of written feedback or dialogue.

### **1 Point**

The response demonstrates some evidence of mathematical knowledge that is appropriate to the intent of the prompted purpose. An effort was made to accomplish the task, but with little success. Evidence in the response demonstrates that with instruction the student can revise the work to accomplish the task.

### **0 Points**

The response lacks any evidence of mathematical knowledge that is appropriate to the intent of the task.

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## 2 - Point Rubric for Short Constructed-Response Items

This rubric is used to score students' responses to short constructed-response items. These items require the students to use problem-solving skills as they apply to all of the Colorado Model Content Standards for mathematics. An item may ask the student to include and communicate reasoning using words and /or numbers, evaluate an answer, or demonstrate the process used to determine an answer. There are several short constructed-response items in CSAP, each taking approximately 3 to 5 minutes to complete. Each short constructed-response item receives a single score of 0,1,or 2 points.

### 2 Points

The response accomplishes the prompted purpose and effectively communicates the student's mathematical understanding. The student's strategy and execution meet the content (including concepts, technique, representations, and connections), thinking processes, and qualitative demands of the task. Minor omissions may exist, but do not detract from the correctness of the response.

### 1 Point

The response partially accomplishes the prompted purpose. The student's strategy and execution lack adequate evidence of the learning and strategic tools that are needed to accomplish the task. The response may show some effort to accomplish the task, but with little success. It is clear that the student requires additional feedback and/or instruction from the teacher in order to accomplish the task.

### 0 Points

The response lacks evidence of mathematical knowledge that is appropriate to the intent of the task.

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