

Review,
Practice,
& Mastery of

CALIFORNIA MATHEMATICS STANDARDS

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For the Student

This book will help you review, practice, and master the California Mathematics Content Standards. Here are the steps to follow to use this book.

1. Take the Tryout Test and check your answers. Use the chart at the bottom of this page to find out your strengths and weaknesses in the areas covered. Don't be discouraged if you don't get all the answers right or if you don't understand some questions. Remember the questions that are hard for you to answer. They will be the types of questions you need to work on the most.
2. Work through the lessons that follow the Tryout Test. Each lesson provides a review as well as practice questions based on the content standards. Each lesson ends with a short mastery test to reinforce your learning. As you go, complete the "Charting Your Progress" chart on page 104 of this book.
3. After completing all seven lessons, take the Final Mastery Test. Your score on this test will show your understanding of the content standards.

By following the steps outlined above, you will increase your mastery of the California Mathematics Content Standards.

Lesson	Tryout Test Items	Final Mastery Test Items
1 Number Sense	1, 2, 7, 11, 12, 16, 30, 38, 43, 50, 52, 53	1, 2, 7, 11, 12, 16, 30, 38, 43, 50, 52, 53
2 Operations	20, 21, 22, 23, 40, 47, 49, 54	20, 21, 22, 23, 40, 47, 49, 54
3 Algebra	9, 10, 25, 28, 29, 31, 32, 61	9, 10, 25, 28, 29, 31, 32, 61
4 Graphing	24, 26, 34, 39, 41	24, 26, 34, 39, 41
5 Measurement	3, 4, 5, 6, 13, 17, 18, 19, 27, 42, 44, 45, 46, 48, 51	3, 4, 5, 6, 13, 17, 18, 19, 27, 42, 44, 45, 46, 48, 51
6 Geometry	33, 55, 56, 57	33, 55, 56, 57
7 Statistics & Probability	8, 14, 15, 35, 36, 37, 58, 59, 60, 62, 63	8, 14, 15, 35, 36, 37, 58, 59, 60, 62, 63

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Number Sense

- Using Scientific Notation
- Calculating with Rational Numbers
- Equivalent Fractions, Decimals, and Percents
- Converting Fractions and Decimals
- Calculating with Percentages

Using Scientific Notation

Review Number Sense Standard 1.1

Mathematicians and scientists use scientific notation to make it easier to read and write very large and very small numbers. For example, 1.3×10^{11} is easier to read than the standard form 130,000,000,000.

Example A Which answer choice shows 0.000409 written in scientific notation?

- A 4.9×10^4 C 4.09×10^{-3}
 B 4.09×10^4 D 4.09×10^{-4}

Reading Scientific Notation

The exponent tells you how many places to move the decimal point. A positive exponent tells you to move the decimal point to the right.

$$4.9 \times 10^4 = 49,000$$

A negative exponent tells you to move the decimal point to the left.

$$4.9 \times 10^{-4} = 0.00049$$

Try It

Now try these problems on your own.

Questions 1–3: Write the standard form of each number.

1 6.03×10^3 _____

2 2.109×10^{-6} _____

3 8.915×10^{10} _____

Step-By-Step

Follow these steps to solve Example A.

- 1 Move the decimal point until you create a number greater than 0 but less than 10.

$$0.000409$$

- 2 How many places did you move? _____

- 3 The number of places you moved the decimal point is the value of the exponent.

- 4 If you moved the decimal point to the right, place a negative sign on the exponent. If you moved it to the left, the exponent is positive. Which answer choice shows the correct answer?

Questions 4–5: Write each number in scientific notation.

4 0.000006035 _____

5 98,605,000,000 _____

- 6 Which number is greater than 5.65×10^{-4} but less than 0.0006?

- A 0.00561 C 0.0065239
 B 0.0009017 D 0.000581

Calculating with Rational Numbers

Review Number Sense Standard 1.2 You can add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers.

Example B $-2 - (-4) =$

- A -8 C -2
B -6 D 2

Remember . . .

When subtracting, it sometimes helps to rewrite a problem by **adding the opposite**. Review the following chart.

Subtraction	Adding the Opposite
$3 - 5 = -2$	$3 + (-5) = -2$
$-5 - 2 = -7$	$-5 + (-2) = -7$
$-5 - (-2) = -3$	$-5 + 2 = -3$

Example C $6.3 \div 1.2 =$

- A 5 R3 C 5.25
B 5.2 D 5.3

Remember . . .

When adding or subtracting decimals, remember to line up the decimal points. Fill in zeros for any missing digits.

$$\begin{array}{r} 0.70 \\ - 14.69 \\ \hline \end{array}$$

When multiplying decimals, count the number of decimal places in the factors and add. This is the number of decimal places in the product.

$$\begin{array}{r} 1.03 \\ \times 1.5 \\ \hline 1.545 \end{array}$$

Step-By-Step

- 1 Rewrite the problem by adding the opposite. Which sign, + or -, should go in the blank?

$$-2 - (-4) = -2 \quad \square \quad 4 =$$

- 2 Solve the rewritten problem.

$$-2 + 4 = \square$$

Step-By-Step

- 1 First rewrite the problem as long division to make it easier to solve.

$$1.2 \overline{)6.3}$$

- 2 Move the decimal point in the divisor to the right until it is a whole number. Move the decimal point in the dividend the same number of places.

$$12 \overline{)63}$$

- 3 Divide as you would with whole numbers.

$$12 \overline{)63.0}$$

Go On \rightarrow

Example D Find the difference.

$$5\frac{1}{10} - 2\frac{5}{6} =$$

A $2\frac{4}{15}$

C $3\frac{11}{15}$

B $3\frac{2}{5}$

D 4

Remember . . .

When adding or subtracting fractions, you must first find a common denominator. Then add or subtract the numerators.

Example E Simplify $(-2)^4$.

A 16

C -8

B 8

D -16

Remember . . .

When two factors have different signs, the product is *negative*.

$$5 \times -5 = -25$$

When two factors both have negative signs, the product is *positive*.

$$-5 \times -5 = 25$$

Step-By-Step

This problem involves mixed numbers. There are several ways to find a solution. Here is one approach.

- 1 Find a common denominator for the two fractions by multiplying the denominators. Then multiply the numerator by the same number. Write new fractions with the common denominator.

$$\frac{1}{10} \times \frac{3}{3} = \frac{3}{30} \qquad \frac{5}{6} \times \frac{5}{5} = \frac{25}{30}$$

$$5\frac{3}{30} - 2\frac{25}{30} =$$

- 2 You can't take 25 away from 3, so you need to regroup. Rename a one as thirtieths.

$$4 + \frac{30}{30} + \frac{3}{30} - 2\frac{25}{30} =$$

- 3 Subtract. Complete the problem.

$$4\frac{33}{30} - 2\frac{25}{30} = \underline{\hspace{2cm}}$$

Step-By-Step

- 1 Convert $(-2)^4$ into a multiplication expression. The number -2 is the base; the exponent 4 indicates that you are to repeat -2 as a factor 4 times.

$$(-2)^4 = -2 \times -2 \times -2 \times -2$$

- 2 Multiply the factors in pairs. Remember, the product of two negative factors is a positive number.

$$(-2)^4 = (-2 \times -2) \times (-2 \times -2)$$

$$(-2)^4 = 4 \times 4$$

$$(-2)^4 = \underline{\hspace{2cm}}$$

Try It Now try these problems on your own.

7 $\frac{3}{8} \div -\frac{1}{6} =$

A $-2\frac{1}{4}$ C $\frac{5}{24}$

B $-\frac{1}{16}$ D $2\frac{1}{4}$

8 $-24 \div -8 =$

A -4 C 3

B -3 D 4

9 Find the product of 2.3 and 21.7.

A 49.91 C 24

B 42.21 D 9.43

10 $6\frac{5}{8} + 2\frac{2}{3} =$

A $8\frac{7}{24}$ C $9\frac{1}{8}$

B $8\frac{7}{11}$ D $9\frac{7}{24}$

11 Find the sum of these numbers.

38 16.7 126.39 9.436

A 42.564 C 275.45

B 190.526 D 22,580

12 Simplify $(-4)^5$.

Answer: _____

13 Ned and Nicky raked Mr. Guardo's yard. He paid them \$15 for their work. If Ned and Nicky split the money evenly, how much will each receive?

Answer: _____

14 Jane's garden measures $3\frac{1}{3}$ yards on two edges and $1\frac{5}{6}$ yards on two edges. Jane wants to put a border of stones around her garden. What is the total distance around Jane's garden?

Answer: _____

15 Krista has weighed out 5.341 mg of a chemical for a science experiment. She needs a total of 6.5 mg of that chemical. How much more does she need to weigh out?

Answer: _____

16 $8 - (-5) =$

A 13 C -3

B 3 D -13

17 Simplify 3^7 .

A 21 C 2187

B 729 D 15,309

18 Harry started a mountain hike at 7:00 A.M. It was 2°C at that time. As the sun rose and Harry's hiking path turned to less-shaded ground, the temperature increased by 3° . The final part of Harry's hike was a sharp ascent to the tundra region. By the time he reached the top of the mountain, the temperature had decreased by 7° . What was the temperature at the top of the mountain?

Answer: _____

Equivalent Fractions, Decimals, and Percents

Review Number Sense Standard 1.3

Equivalent fractions, decimals, and percents name the same amount. For example, $\frac{1}{2}$, 0.5, and 50% are equivalent.

Example F Write $\frac{7}{20}$ as a decimal and a percent.

$\frac{7}{20}$ as a decimal = _____

$\frac{7}{20}$ as a percent = _____

Remember . . .

The fraction bar represents division.

$$\frac{3}{4} = 3 \div 4 = .75$$

A percent is a ratio to 100.

$$\frac{3}{4} = \frac{75}{100} = 75\%$$

Example G

A caterer made pies for a dinner party. One-fourth of the pies were eaten the first time the party came through the serving line. Five-eighths of the remaining pies were eaten by the time the caterer packed up to leave. What percent of the pies were not eaten?

Answer: _____ %

Remember . . .

When a problem describes a fraction of a remaining fraction, the problem must be worked in stages. Multiplying the two given fractions together will provide an incorrect answer.

Step-By-Step

- 1 To convert a fraction to a decimal, write the fraction as a division problem and solve.

$$\frac{7}{20} = 7 \div 20 = \underline{\hspace{2cm}}$$

- 2 To find the percent, multiply the decimal by 100. As a shortcut, move the decimal point 2 places to the right.

$$\frac{7}{20} = \underline{\hspace{2cm}} \%$$

Step-By-Step

- 1 One-fourth of the pies were eaten first. What fraction of the pies remained? Let 1 represent the original total. Subtract.

$$1 - \frac{1}{4} = \frac{3}{4}$$

- 2 After the first serving, $\frac{3}{4}$ of the pies remain. Of those remaining pies, $\frac{5}{8}$ were eaten. Multiply to find the total eaten.

$$\frac{5}{8} \times \frac{3}{4} = \underline{\hspace{2cm}}$$

- 3 Subtract from 1 to find the remaining pies.

$$1 - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

- 4 Convert the fraction to a percent.

$$\underline{\hspace{2cm}} \%$$

Example H Seven out of 50 states in the United States do not assess a state income tax. Approximately what percent of the states do not have a state income tax?

- A 7% C 25%
 B 10% D 50%

Remember . . .

To convert a fraction to a percent, compare it to a fraction with 100 as the denominator. Find cross products and divide.

$$\frac{5}{8} = \frac{x}{100}$$

$$8x = 500$$

$$x = 500 \div 8$$

$$x = 62.5\%$$

Step-By-Step

1 Express as a fraction the portion of states that do not have a state income tax.

2 Notice that the question asks for an approximate percent. Choose a number for the numerator that is compatible with the denominator so that it's easier to divide.

7 is close to _____.

3 Convert the fraction to a percent by simplifying.

$$\frac{5}{50} = \underline{\hspace{1cm}} \%$$

Try It Now try these problems on your own.

19 Write each fraction as a decimal and as a percent.

$\frac{1}{4} =$ **Decimal:** _____ **Percent:** _____

$\frac{3}{8} =$ **Decimal:** _____ **Percent:** _____

$\frac{17}{20} =$ **Decimal:** _____ **Percent:** _____

20 Estimate the percent that describes 47 out of 212.

Answer: _____

21 Josh scored 3 goals out of 10 attempts in today's soccer game. What percent of the time did Josh make a goal?

- A 3% C 10%
 B $3\frac{1}{3}\%$ D 30%

22 To convert a percent to a decimal, you divide by 100. What would you do to change a decimal to a percent?

Answer: _____

23 Carolyn is practicing jumps for a skateboard competition. She fell off the skateboard only 3 of the 48 times she practiced the jump. What percent of the time did Carolyn fall off the skateboard?

Answer: _____

Converting Fractions and Decimals

Review Number Sense Standard 1.5 All fractions can be converted to decimals. These decimals either terminate (end) or repeat a pattern continuously.

Example I Convert the following fractions into decimals. Then determine if the decimal is repeating or terminating. The first one has been done for you as an example.

$$\frac{2}{9} \text{ .222... ; repeating}$$

$$\frac{3}{10} \text{ _____ ; _____}$$

$$\frac{2}{3} \text{ _____ ; _____}$$

$$\frac{5}{11} \text{ _____ ; _____}$$

Example J Which shows 0.175 as a fraction in simplest form?

- A $\frac{17}{5}$ C $\frac{7}{40}$
 B $\frac{175}{100}$ D $\frac{1}{5}$

Try It Now try these problems on your own.

- 24 Which shows 0.696 as a fraction in simplest form?
 A $\frac{87}{125}$ C $\frac{34}{8}$
 B $\frac{348}{100}$ D $\frac{17}{25}$
- 25 Which fraction is represented by a repeating decimal?
 A $\frac{4}{5}$ C $\frac{7}{20}$
 B $\frac{3}{4}$ D $\frac{5}{9}$

Step-By-Step

- To convert $\frac{3}{10}$ to a decimal, divide the numerator by the denominator.

$$3 \div 10 = 0.3$$

- Since this division ends with no remainder, this is a terminating decimal.
- Repeat with the remaining fractions.

Step-By-Step

- Write the word name for the decimal.

$$0.175 = 175 \text{ thousandths}$$

- Write a fraction with 175 as the numerator and 1,000 as the denominator. Simplify the fraction.

$$0.175 = \frac{175}{1,000} = \underline{\hspace{2cm}}$$

- 26 Complete the table.

Fraction	Decimal
$\frac{5}{8}$	
	0.325
$\frac{9}{11}$	
	0.26

Calculating with Percentages

Review Number Sense Standards 1.6–1.7

Percents are used in many everyday situations, including finding how much something changed, price markups and discounts, commissions on sales, and interest on loans and savings accounts.

Example K

The regular price of a bicycle is \$67.95. Gwen bought the bicycle when the store had a 15% off sale. How much did Gwen pay for the bicycle?

Answer: _____

Frequently Used Percents

Percent	Decimal	Fraction
10%	0.1	$\frac{1}{10}$
20%	0.2	$\frac{1}{5}$
25%	0.25	$\frac{1}{4}$
50%	0.5	$\frac{1}{2}$
75%	0.75	$\frac{3}{4}$

Step-By-Step

- 1 First compute the discount. Change 15% to a decimal or fraction and then multiply by \$67.95. Round to the nearest cent.

$$15\% = 0.15$$

$$0.15 \times \$67.95 = \underline{\hspace{2cm}}$$

- 2 Subtract the discount from the regular price.

$$\$67.95 - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Simple interest is interest that is paid only on a principal amount. **Compound interest** is interest that is paid on both the principal and the interest that has already been paid.

Example L

Colin has \$250 he wants to invest for 3 years. He can choose between two accounts. In account A he will receive 4.37% simple interest. In account B he will receive 3.01% semiannually compounded interest. In which account will Colin earn the most interest?

Answer: _____

Formula for Simple Interest:

$I = p \times r \times t$ where I is the interest, p is the principal (initial investment), r is the interest rate as a decimal, and t is the time in years.

Formula for Compound Interest:

$A = P(1 + \frac{r}{n})^{nt}$ where A is the total amount of principal and interest, P is the principal, r is the interest rate, t is the time in years, and n is the number of times the interest is compounded each year.

Step-By-Step

- 1 Substitute the numbers from the problem into each formula and simplify.

$$\text{Simple Interest: } I = p \times r \times t$$

$$I = \$250 \times 0.0437 \times 3 = \underline{\hspace{2cm}}$$

$$\text{Compound Interest: } A = P(1 + \frac{r}{n})^{nt}$$

$$A = \$250(1 + \frac{0.0301}{2})^{2 \times 3} = \underline{\hspace{2cm}}$$

- 2 Notice that the compound interest formula calculates both principal and interest. Subtract to find the amount of interest earned.

$$\underline{\hspace{2cm}} - \$250.00 = \underline{\hspace{2cm}}$$

- 3 Compare the two interest amounts.

Go On →

Example M Elizabeth’s rate of pay increased from \$6.75 an hour to \$7.15 an hour. Find the percent increase. Round to the nearest whole number percent.

Answer: _____

Remember . . .

Change decimal answers to percents by moving the decimal point two places to the right.

$$5.0 = 500\%$$

Step-By-Step

1 Subtract to find how much the pay increased.

$$\$7.15 - \$6.75 = \underline{\hspace{2cm}}$$

2 Divide the increase by the original rate.

$$\$0.40 \div \$6.75 = \underline{\hspace{2cm}}$$

3 Convert the answer as a percent by multiplying by 100. (Move the decimal point two places to the right.)

$$\underline{\hspace{2cm}} \times 100 = \underline{\hspace{2cm}}\%$$

4 Round to the nearest whole percent.

Try It Now try these problems on your own.

27 While driving along a mountain road, Susanne saw a sign reporting the elevation as 12,350 ft. After descending gradually for several miles, Susanne noticed another sign reporting the elevation as 10,257 ft. Find the percent decrease in elevation. Round to the nearest whole percent.

Answer: _____

28 Find the compound interest earned on \$100 at 5.75% if the money is left in an account for 50 years and interest is compounded monthly. Round to the nearest cent.

- A \$1,660.41 C \$917.89
- B \$945.66 D \$237.50

29 Kevin earns 1.5% commission on each house he sells. Kevin just sold a house for \$258,000. How much did he earn in commission?

- A \$1,720 C \$38,700
- B \$3,870 D \$172,000

30 Wheels, Inc., has a profit margin of 12.13%. That means that the profit, or the amount of money left over after paying expenses, is 12.13% of sales. If sales were \$457,500 last month, what were the profits earned? Round to the nearest cent.

Answer: _____

31 Find the simple interest earned on \$500 at 5.5% if the money is left in an account for 20 years.

- A \$550 C \$95,888
- B \$959 D \$55,000

32 Blooms R Us buys flowers from growers. Roses cost \$0.58 per rose. Blooms R Us charges their customers \$25 for 1 dozen roses. Find the percent markup, or price increase, for one rose. Round to the nearest tenth percent.

Answer: _____

Mastery Test 1

Estimated time: 20 minutes

Directions: For a multiple-choice question, choose the best answer.
For a short answer question, write your answer on the line.

- 1 Write the following numbers in scientific notation.
- a. 161,200,000 _____
- b. 0.067 _____
- c. 0.0000185 _____
- d. 51,237,200,000,000 _____

- 2 Which symbol completes this comparison expression?

$$3.139 \times 10^{-3} \square 4.3 \times 10^{-4}$$

- A = C >
B < D \geq

- 3 Find the difference of 5 and -6 .

Answer: _____

- 4 Timothy is selling candy bars as a fundraiser for his baseball team. Candy bars cost \$1.25 each. Each case holds 24 candy bars. How much money will he collect if he sells 2 cases of candy bars?

- A \$15 C \$60
B \$30 D \$120

- 5 Via won \$250,000 in a lottery. A tax assessor claimed 24.7% of her winnings. How much money will she receive after taxes are paid?

Answer: _____

- 6 Write each fraction as a decimal and as a percent.

$$\frac{7}{10} = \text{Decimal: } \underline{\hspace{2cm}} \quad \text{Percent: } \underline{\hspace{2cm}}$$

$$\frac{3}{8} = \text{Decimal: } \underline{\hspace{2cm}} \quad \text{Percent: } \underline{\hspace{2cm}}$$

$$\frac{19}{25} = \text{Decimal: } \underline{\hspace{2cm}} \quad \text{Percent: } \underline{\hspace{2cm}}$$

$$\frac{21}{48} = \text{Decimal: } \underline{\hspace{2cm}} \quad \text{Percent: } \underline{\hspace{2cm}}$$

- 7 Which shows 0.525 as a fraction in simplest form?

- A $\frac{1}{5}$ C $\frac{21}{40}$
B $\frac{1}{2}$ D $5\frac{1}{4}$

- 8 Ben bought a pair of jeans on sale for 25% off. The original price of the jeans was \$25.99. How much did he pay for the jeans?

Answer: _____

- 9 Erin earns commission on sales she makes at a jewelry store. She earns 2.5% on all sales in addition to being paid \$12.50 an hour. Erin worked 25 hours last week and sold \$1,100 in jewelry. How much did she earn last week?

- A \$27.50 C \$340.00
B \$312.50 D \$687.50

Go On 

Mastery Test 1

- 10 Ty made a snowman in a contest. Ty's snowman was $47\frac{1}{8}$ inch tall when he completed it. One hour later, the snowman was only $39\frac{3}{4}$ inches tall due to melting. By how much did the height of Ty's snowman decrease in one hour?

A $7\frac{3}{8}$ inches C $8\frac{3}{8}$ inches
B $8\frac{1}{2}$ inches D $8\frac{5}{8}$ inches

- 11 Simplify $(-8)^4$.

A $-4,096$ C 48
B -48 D 4,096

- 12 On Monday, 239 students were absent from school. On Tuesday, 138 students were absent. Find the percent decrease in the number of students absent from school rounded to the nearest whole percent.

Answer: _____

- 13 Find the quotient.

$$5\frac{7}{8} \div 2\frac{2}{3} =$$

Answer: _____

- 14 Find the sum of the following numbers.

$$5.179 \quad 5.7 \quad 579.1 \quad 0.59$$

A 110.86 C 595.879
B 590.569 D 648.979

- 15 Out of 40 weeks of school, 14 weeks include at least one day off. Estimate the percent of the weeks of school that include at least one day off.

A 5% C 20%
B 15% D 35%

- 16 The profit margin on sales at On the Go convenience store is 38.7%. The total sales last month were \$235,378. How much profit was earned? Round to the nearest cent.

Answer: _____

- 17 Hillary opened a Certificate of Deposit (CD) at her bank with \$1,000. The CD earns 3.12% interest compounded monthly. How much will be in the account after 21 months? Use the formula for compound interest below; round to the nearest cent. (Hint: Since the interest is compounded monthly, $n = 12$ and $t = 1.75$ because 21 months = 1.75 years.)

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

Answer: _____

- 18 As an employee of Chris Crafts, John receives a 25% discount on everything he buys. John bought some craft supplies that would normally have cost \$50. How much did he pay?

A \$37.50 C \$12.50
B \$25.00 D \$10.00

- 19 Michele can earn 6.8% simple interest or 3.95% compound interest on her savings account. She's planning to make a deposit of \$375 and will not withdraw from the account for 5 years. If the compound interest is compounded quarterly (4 times a year), which interest rate should she choose in order to earn the most interest?

Answer: _____



Total Correct: _____ / 19

Review,
Practice,
& Mastery of

Teacher Guide • General Math

CALIFORNIA MATHEMATICS STANDARDS



PERFECTION LEARNING®

For the Teacher

The *Review, Practice, and Mastery* program is a refresher course. It provides a self-directed approach to reviewing and practicing the California Content Standards. Use the following steps to incorporate *Review, Practice, and Mastery* into your classroom.

1. Have students take the Tryout Test and check their answers. Then have them use the reproducible Skills Chart on page 12 of this teacher guide to assess their strengths and weaknesses in the areas covered. (The chart below is also available in the student book.) You may also wish to have students enter their answers in the reproducible Student Information and Answer Sheet on pages 14 and 15 of this teacher guide.
2. Have students work through the lessons, paying close attention to the areas in which they need improvement. You will see that each lesson page correlates to one or more of the California Content Standards. Each lesson is followed by a Mastery Test that focuses on the skills covered in the lesson. Have students fill in the Charting Your Progress chart on page 104 of the student book after they complete each test.
3. After completing all the lessons, have students take the Final Mastery Test to check their progress. They can also enter their answers on the reproducible Student Information and Answer Sheet on pages 16 and 17 of this teacher guide.

The chart that begins on page 18 of this teacher guide correlates the lessons to the California Content Standards.

Lesson	Tryout Test Items	Final Mastery Test Items
1 Number Sense	1, 2, 7, 11, 12, 16, 30, 38, 43, 50, 52, 53	1, 2, 7, 11, 12, 16, 30, 38, 43, 50, 52, 53
2 Operations	20, 21, 22, 23, 40, 47, 49, 54	20, 21, 22, 23, 40, 47, 49, 54
3 Algebra	9, 10, 25, 28, 29, 31, 32, 61	9, 10, 25, 28, 29, 31, 32, 61
4 Graphing	24, 26, 34, 39, 41	24, 26, 34, 39, 41
5 Measurement	3, 4, 5, 6, 13, 17, 18, 19, 27, 42, 44, 45, 46, 48, 51	3, 4, 5, 6, 13, 17, 18, 19, 27, 42, 44, 45, 46, 48, 51
6 Geometry	33, 55, 56, 57	33, 55, 56, 57
7 Statistics & Probability	8, 14, 15, 35, 36, 37, 58, 59, 60, 62, 63	8, 14, 15, 35, 36, 37, 58, 59, 60, 62, 63

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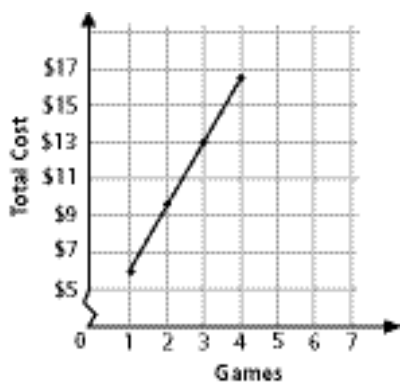
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Answer Key

Tryout Test (p. 4)

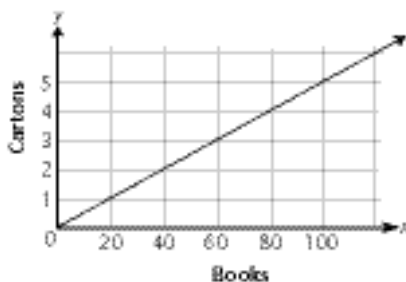
1. D
2. B
3. A
4. D
5. D
6. D
7. A
8. $\frac{2}{6}$
9. D
10. Equation: $n + (n + 1) = 43$
Solution: $n = 21$
11. B
12. D
13. B
14. Mean: 2.3 or 2
Median: 2
Mode: 3
Range: 5
Answer: range
15. A
16. B
17. B
18. C
19. B
20. B
21. A
22. B
23. A
24. Completed graph:



25. 113

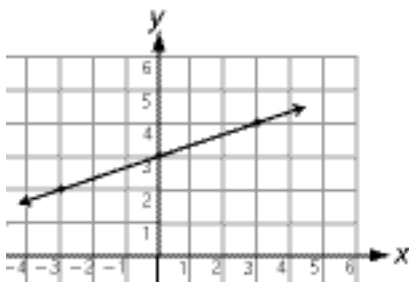
26. Table: 60, 80, 100

Completed graph:



Slope: $\frac{1}{20}$

27. D
28. D
29. A
30. A
31. C
32. A
33. 75 yards
34. D
35. C
36. B
37. B
38. D
39. 64,000 people
40. C
41. Completed graph:



Slope: $\frac{1}{2}$

42. A
43. C
44. A
45. C
46. C
47. A
48. 20 weeks
49. B
50. B
51. C
52. C
53. B

54. 50
55. B
56. B
57. No
58. D
59. C
60. A
61. B
62. 11
63. B

LESSON 1 Number Sense

Using Scientific Notation (p. 12)

Ex. A D

1. 6,030
2. 0.000002109
3. 89,150,000,000
4. 6.035×10^{-6}
5. 9.8605×10^{10}
6. D

Calculating with Rational Numbers (p. 13)

Ex. B D

Ex. C C

Ex. D A

Ex. E A

7. A
8. C
9. A
10. D
11. B
12. -1,024
13. \$7.50
14. $10\frac{1}{2}$ yards
15. 1.159 mg
16. A
17. C
18. -2°C

Equivalent Fractions, Decimals, and Percents (p. 16)*Ex. F* 0.35, 35%*Ex. G* 53.125%*Ex. H* B

19. 0.25, 25%
0.375, 37.5%
0.85, 85%
20. About 25%
21. D
22. Multiply by 100
23. 6.25%

Converting Fractions and Decimals (p. 18)

Ex. I 0.3, terminating,
0.666 . . . , repeating
0.4545 . . . , repeating

Ex. J C

24. A

25. D

26. *Completed table:*

Fraction	Decimal
$\frac{5}{8}$	0.625
$\frac{13}{40}$	0.325
$\frac{9}{11}$	0.8181 . . .
$\frac{13}{50}$	0.26

Calculating with Percentages (p. 19)*Ex. K* \$57.76*Ex. L* Account A will earn Colin more interest.*Ex. M* 6%

27. 17%
28. A
29. B
30. \$55,494.75
31. A
32. 258.6%

Mastery Test 1 (p. 21)

1. a. 1.612×10^8
b. 6.7×10^{-2}

- c. 1.85×10^{-5}
d. 5.12372×10^{13}

2. C
3. 11
4. C
5. \$188,250
6. a. 0.7; 70%
b. 0.375; 37.5%
c. 0.76; 76%
d. 0.4375; 43.75%
7. C
8. \$19.49
9. C
10. A
11. D
12. 42%
13. $2^{13/64}$
14. B
15. D
16. \$91,091.29
17. \$1,056.04
18. A
19. 6.8% simple interest

LESSON 2
Operations**Working with Exponents** (p. 23)*Ex. A* D*Ex. B* C*Ex. C* $\frac{1}{9}$

1. $\frac{1}{9^4}$
2. $\frac{1}{6^6}$
3. $\frac{1}{4^{10}}$
4. $\frac{1}{8}$
5. $\frac{1}{10,000}$
6. $\frac{1}{256}$
7. 5^{-4}
8. 9^6
9. 10^{-5}
10. $\frac{10}{3^6}$ or 10×3^{-6}
11. 3^8 or 6,561
12. 64
13. 4^{-4} or $\frac{1}{4^4}$
14. D
15. D
16. C
17. B

Using Exponents to Solve Problems (p. 26)*Ex. D* B*Ex. E* A

18. 5^2 ; 4^4 or 2^8 ; 11^2
19. B
20. D
21. $\frac{6^2}{6^3} \times \frac{6}{6^4} = \frac{6^2}{6^7} = \frac{1}{6^4} = \frac{1}{1,296}$
22. 1

Adding and Subtracting Fractions (p. 28)*Ex. F* $\frac{25}{72}$ 23. $1^{17/36}$ 24. $\frac{59}{120}$ **Exponents and Roots** (p. 29)*Ex. G* $14 < \sqrt{212} < 15$

25. 49, 16, 289, and 441 should be circled.
26. 58
27. C
28. 525 is not a perfect square. The value of $\sqrt{525}$ is between 22 and 23.

Absolute Value (p. 30)*Ex. H* 5, 5, -5

29. 7, 29, -45

30. B

31. B

32. *Possible answers:* $|38|$ and $|-38|$ **Mastery Test 2** (p. 31)

1. $\frac{1}{25}$
2. $\frac{1}{2}$
3. $\frac{3}{4}$
4. C
5. $\frac{57}{80}$
6. C
7. B
8. 81
9. -62
10. 14
11. *Possible answers:* $|27|$ and $|-27|$
12. D
13. 25 and 26
14. D