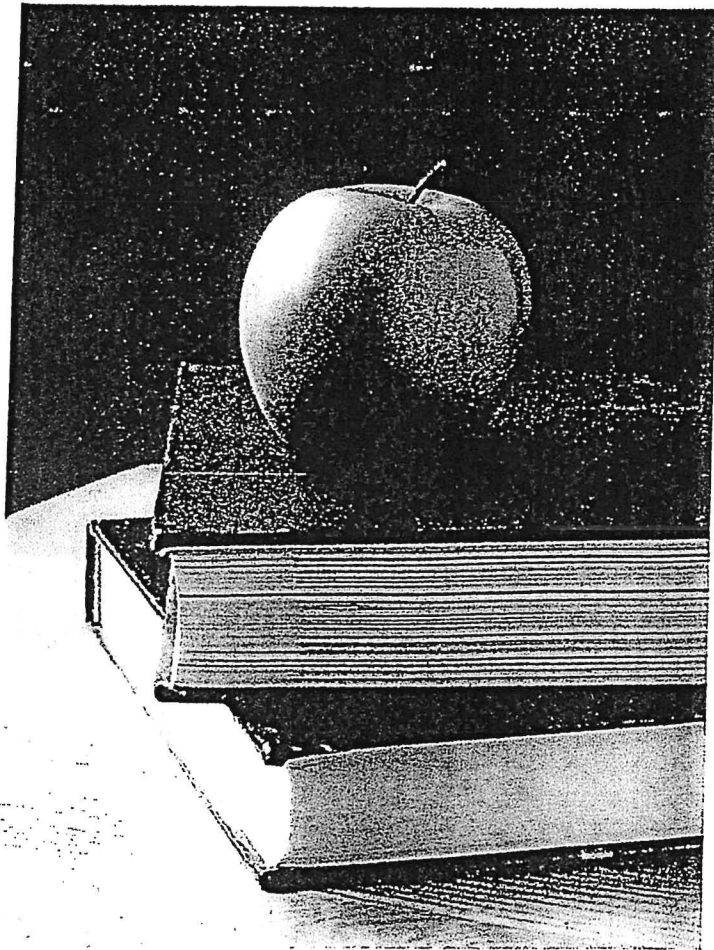


Summer Math for SCS Grade 8



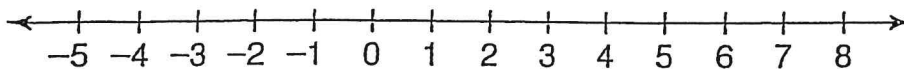
Please complete this entire Math packet and bring it with you on the first day of eighth grade math. It counts as your first test grade. This assignment contains many different types of Math concepts. Try your best!

ALSO, MAKE SURE YOU SHOW ALL OF YOUR WORK ON LOOSE LEAF AND PLACE YOUR ANSWERS ON THE LINES PROVIDED ON EACH WORKSHEET.

CHAPTER 3 **Family Letter**
Rational Numbers

1. Place each number on the number line.

$-\frac{1}{4}$ $5\frac{3}{4}$ $2\frac{1}{2}$ 1.5 $\frac{1}{10}$ -0.75 2.25 $-4\frac{3}{4}$



Show that each number is a rational number by writing it as a fraction.

2. 3.25

3. 0.5

4. $-4\frac{3}{4}$

5. -6.3

Find two fractions equivalent to each fraction.

6. $\frac{3}{8}$

7. $\frac{5}{9}$

8. $\frac{2}{3}$

9. $\frac{15}{20}$

Convert between improper fractions and mixed numbers.

10. $\frac{17}{6}$

11. $4\frac{6}{7}$

12. $\frac{84}{7}$

13. $3\frac{9}{13}$

Convert each decimal to a fraction in simplest form.

14. 0.85

15. 3.2

16. 1.38

17. 3.07

Compare the fractions using < or >.

18. $\frac{1}{8} \square \frac{2}{5}$

19. $\frac{3}{4} \square \frac{4}{5}$

20. $\frac{1}{6} \square \frac{1}{8}$

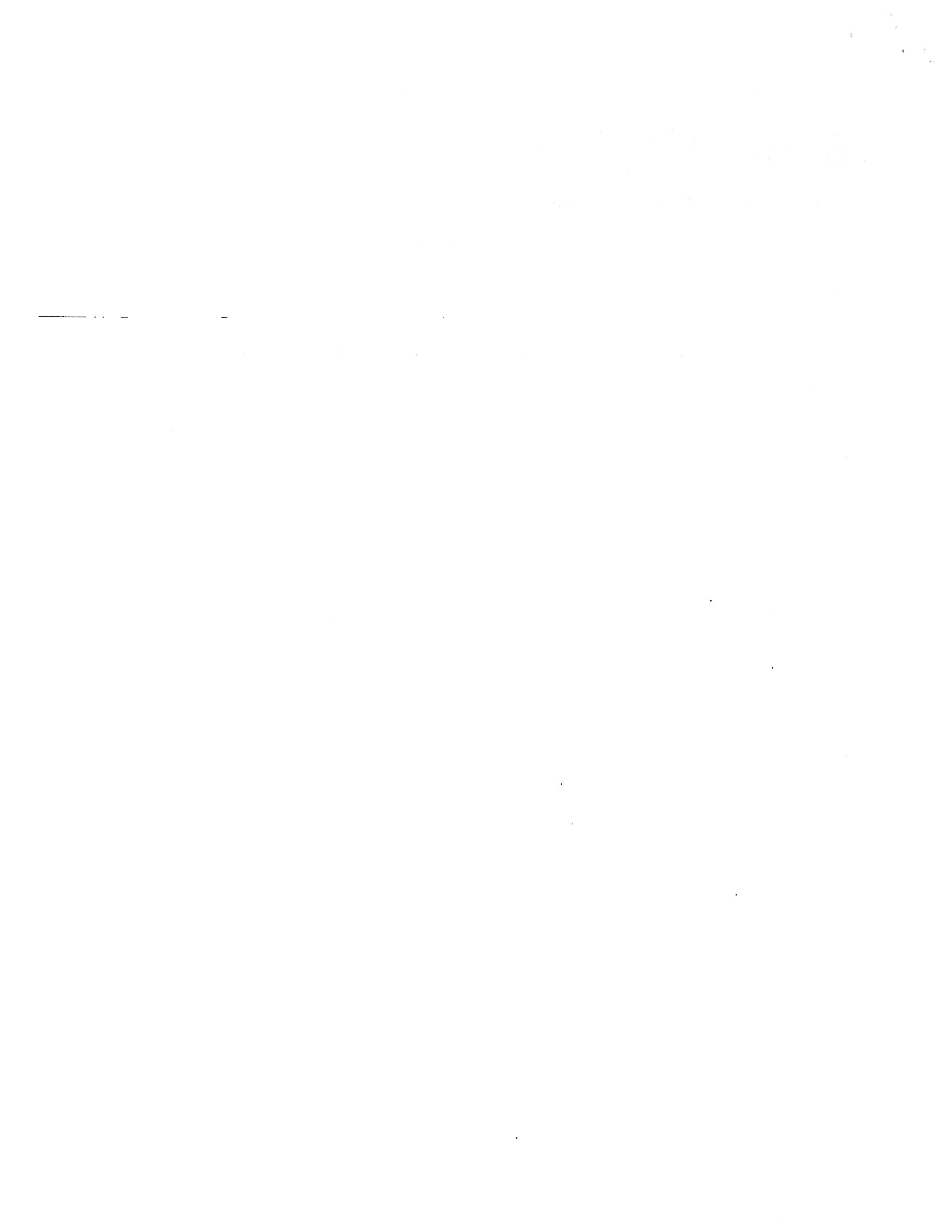
21. $\frac{9}{10} \square \frac{7}{8}$

Place the following numbers in order from least to greatest.

22. 0.6, 0.603, 0.61

23. -3, 3.01, -2.5

24. 0.28, 2.08, -2.88



CHAPTER 5 **Family Letter**
Numerical Proportions

A school has 42 sixth graders, 56 seventh graders, and 49 eighth graders. Write the ratio in all three forms.

1. sixth graders to eighth graders

2. seventh graders to total students

Find the unit rates and write them in both fraction and word form.

3. Rachel drives 180 miles in 3 hours

4. A store sells 12 drinks for \$3.60

Determine if the ratios are proportional by reducing them to simplest form and comparing them.

5. $\frac{12}{18}, \frac{20}{30}$

6. $\frac{25}{40}, \frac{15}{24}$

7. $\frac{28}{49}, \frac{16}{36}$

Find an equivalent ratio. Then write the proportion.

8. $\frac{12}{7}$

9. $\frac{3}{6}$

10. $\frac{22}{55}$

Use cross products to solve the proportion.

11. $\frac{6}{x} = \frac{21}{28}$

12. $\frac{5}{7} = \frac{m}{28}$

13. $\frac{8}{24} = \frac{6}{t}$

Use a unit conversion factor to convert the units within a rate.

14. Convert 26,400 feet per hour to miles per hour.

Family Letter

Introduction to Percent

Write each percent as a fraction in simplest form.

1. 25%

2. 49%

3. 55%

Write each percent as a decimal.

4. 29%

5. 1%

6. 36%

Write each decimal or fraction as a percent.

7. 0.26

8. $\frac{6}{10}$

9. $\frac{10}{25}$

Use a fraction to estimate the percent of each number.

10. 18% of 151

11. 34% of 90

12. 52% of 269

Find the percent of each number.

13. 26% of 20

14. 12% of 75

15. 25% of 95

Solve.

16. 60 is 120% of what number?

17. 48 is what percent of 20?

18. 13 is what percent of 65?

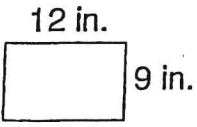
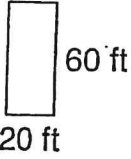
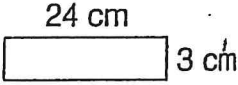
19. 3 is 15% of what number?

20. 310 is 25% of what number?

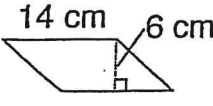
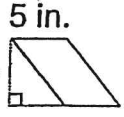
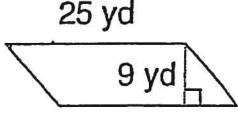
21. 6 is what percent of 12?

CHAPTER 8 Family Letter
Area

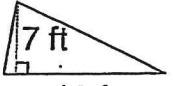
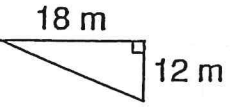

Find the area of each rectangle.

1.  _____
2.  _____
3.  _____

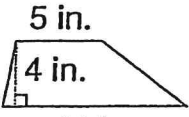
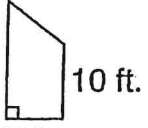
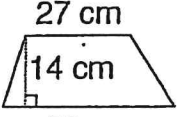
Find the area of each parallelogram.

4.  _____
5.  _____
6.  _____

Find the area of each triangle.

7.  _____
8.  _____
9.  _____

Find the area of each trapezoid.

10.  _____
11.  _____
12.  _____

Find the area of the circle. Use 3.14 for π

13. A circle has a radius of 24 inches. What is the area? Round your answer to the nearest tenth.
- _____

Formulas

Area of rectangle = length \times width
 Area of parallelogram = base \times height
 Area of triangle = $\frac{1}{2} \times$ base \times height
 Area of trapezoid = $\frac{1}{2} (\text{base}_1 + \text{base}_2) \times$ height
 Area of circle = $\pi \times$ radius squared
 $\pi = 3.14$
 πr^2

Practice 1-6 Subtracting Integers

Find each difference.

1. $8 - 12$

2. $13 - 6$

3. $9 - (-12)$

4. $57 - 39$

5. $-173 - 162$

6. $71 - (123)$

7. $51 - 89$

8. $-222 - (-117)$

9. $843 - 677$

10. $-98 - 183$

11. $366 - (-429)$

12. $-83 - (-48) - 65$

Find each difference.

13. $6 - 9$

14. $14 - 8$

15. $-15 - 3$

16. $-25 - 25$

17. $-16 - (-16)$

18. $32 - (-17) - 32$

Find each sum or difference.

19. $-57 + (-98)$

20. $448 - 52$

21. $-191 + (-511)$

22. $-361 - (-58)$

23. $888 + 1,177$

24. $-484 - 1,695$

Write a numerical expression for each phrase. Then simplify.

25. A balloon goes up 2,300 ft, then goes down 600 ft.

26. You lose \$50, then spend \$35.

27. The Glasers had \$317 in their checking account. They wrote checks for \$74, \$132, and \$48. What is their checking account balance?

LESSON

Multi-Step Equations and Inequalities



Practice B: Solving Two-Step Equations

Solve. Check each answer.

1. $7x + 8 = 36$

2. $-3y - 7 = 2$

3. $4a - 13 = 19$

4. $6a - 4 = -2$

5. $5k + 2 = 6$

6. $9m - 14 = -8$

Solve.

7. $\frac{v}{4} - 3 = 5$

8. $\frac{u}{5} + 3 = 1$

9. $6 + \frac{z}{9} = 9$

10. $-7 + \frac{f}{2} = -1$

11. $9 + \frac{w}{4} = -5$

12. $\frac{e}{7} - 3 = -5$

13. $-8 + \frac{d}{5} = 2$

14. $\frac{u}{5} + 3 = 6$

15. $\frac{f}{-3} + 5 = 8$

16. Two years of local Internet service costs \$685, including the installation fee of \$85. What is the monthly fee?

Family Letter

Multistep Equations

Solve. Check each answer.

1. $4x - 7 = 17$

2. $-3m + 8 = -1$

3. $\frac{h}{6} - 11 = -14$

4. $2x + 4 = 30$

5. $-5m + 10 = -15$

6. $\frac{h}{4} + 6 = 12$

Write each equation in words, and then solve the equation.

7. $9 + 3n = 6$

8. $\frac{d}{5} - 1 = 14$

9. $7 - 3a = 16$

Solve.

10. $7m + 4 - 5m = -6$

11. $-3x - 11 + 16x = 15$

12. $\frac{6p - 4}{5} = -2$

13. $5m - 20 - 10m = 15$

14. $8x - 12 - 6x = -14$

15. $\frac{2 + 4p}{7} = -2$

Solve.

16. $13h = 45 - 2h$

17. $8 + 6k = -10k$

18. $39 - 3x = 7x - 1$

19. $3h = 28 - h$

20. $10k - 6 = -2k$

21. $3 - 5x = 6x - 8$

LESSON
1

Multi-Step Equations and Inequalities

Problem Solving: Solving Two-Step Equations

Write the correct answer.

1. Last week, Carlie had several rice cakes and 3 granola bars as snacks. The snacks contained a total of 800 calories. If each granola bar had 120 calories and each rice cake had 40 calories, how many rice cakes did she have?
2. Jo eats 2,200 calories per day. She eats 450 calories at breakfast and twice as many at lunch. If she eats three meals with no snacks, which meal will contain the most calories?
3. Erika is following a 2,200-calorie-per-day diet. She eats the recommended 9 servings of breads and cereals, averaging 120 calories per serving. She also eats 5 servings of vegetables. If the rest of her daily intake is 870 calories, what is the average number of calories in each serving of vegetables?
4. Brandon follows a 2,800-calorie-per-day diet. He has 11 servings of breads and cereals, which average 140 calories each. Yesterday, he had a combined 9 servings of fruits and vegetables, averaging 60 calories each. How many 180-calorie servings of meat and milk did he have to complete his diet?

Choose the letter for the best answer.

The table shows calories burned by a person performing different activities.

Calories Used in Activities

Activity	Calories (per min)
Basketball	7.5
Cycling (10 mi/h)	5.5
Jogging	9.3
Swimming	7.8

5. Kamisha swims for 0.25 hour. How many calories does she burn?
 A 30 calories C 1.95 calories
 B 195 calories D 117 calories
6. Stu jogs at a rate of 5 mi/h. How far must he jog to burn 418.5 calories?
 F 9 mi H 3.75 mi
 G 4.65 mi J 45 mi
7. Terry rides her bike for 40 minutes and plays basketball for an hour. How many calories does she burn?
 A 67 calories C 670 calories
 B 560 calories D 1,300 calories
8. How many hours would you have to ride your bike at 10 mi/h to burn 550 calories?
 F 1.67 hr H 1.0 hr
 G 1.5 hr J 0.75 hr

LESSON **3** **Proportional Relationships**

Problem Solving: Solving Proportions

Write the correct answer.

1. Euros are currency used in several European countries. On one day in October 2005, you could exchange \$3 for about 2.5 euros. How many dollars would you have needed to get 8 Euros?

3. Hooke's law states that the distance a spring is stretched is directly proportional to the force applied. If 20 pounds of force stretches a spring 4 inches, how much will the spring stretch if 80 pounds of force is applied?

2. A 3-ounce serving of tuna fish provides 24 grams of protein. How many grams of protein are in a 10-ounce serving of tuna fish?

4. Beeswax used in making candles is produced by honeybees. The honeybees produce 7 pounds of honey for each pound of wax they produce. How many pounds of honey is produced if 145 pounds of beeswax?

Choose the letter for the best answer.

5. For every 5 books her students read, Mrs. Fenway gives them a free homework pass for 4 days. Juan has accumulated homework passes for 12 days so far. What proportion would you write to find how many books Juan has read?

A $\frac{4}{12} = \frac{x}{5}$

B $\frac{4}{5} = \frac{x}{12}$

C $\frac{4}{5} = \frac{12}{x}$

D $\frac{5}{12} = \frac{4}{x}$

7. A 12-pack of 8-ounce juice boxes costs \$5.40. How much would an 18-pack of juice boxes cost if it is proportionate in price?

A \$9.40

C \$3.60

D \$8.10

D \$12.15

6. In his last 13 times at bat in the township baseball league, Santiago got 8 hits. If he is at bat 65 times for the season, how many hits will he get if his average stays the same?

F $\frac{8}{65} = \frac{x}{13}$

G $\frac{x}{65} = \frac{13}{8}$

H $\frac{8}{x} = \frac{65}{13}$

J $\frac{8}{13} = \frac{x}{65}$

8. Jeanette can swim 105 meters in 70 seconds. How far can she probably swim in 30 seconds?

F 20 meters

H 45 meters

G 245 meters

J 55 meters

CHAPTER 6 **Chapter Test**
Form A, continued

Find each percent of change.

21. 40 is increased to 60

22. 120 is decreased to 96

23. 12 is increased to 21

24. 160 is decreased to 120

Find each missing value.

25. $I = ?$, $p = \$400$, $r = 6\%$, $t = 1$ year

26. $I = \$112$, $p = ?$, $r = 2\%$, $t = 4$ years

27. $I = \$680$, $p = \$8,500$, $r = ?$,
 $t = 2$ years

28. $I = \$480$, $p = \$3,200$, $r = 5\%$, $t = ?$

Solve.

29. A taxi driver received a 19% tip on a \$25 fare. About how much was the tip?

30. A clothing store gave a 12% discount on a \$400 coat. How much was the discount?

31. The population of a town in 2000 was 15,000. In two years, the population increased by 8%. What was the population in 2002?
