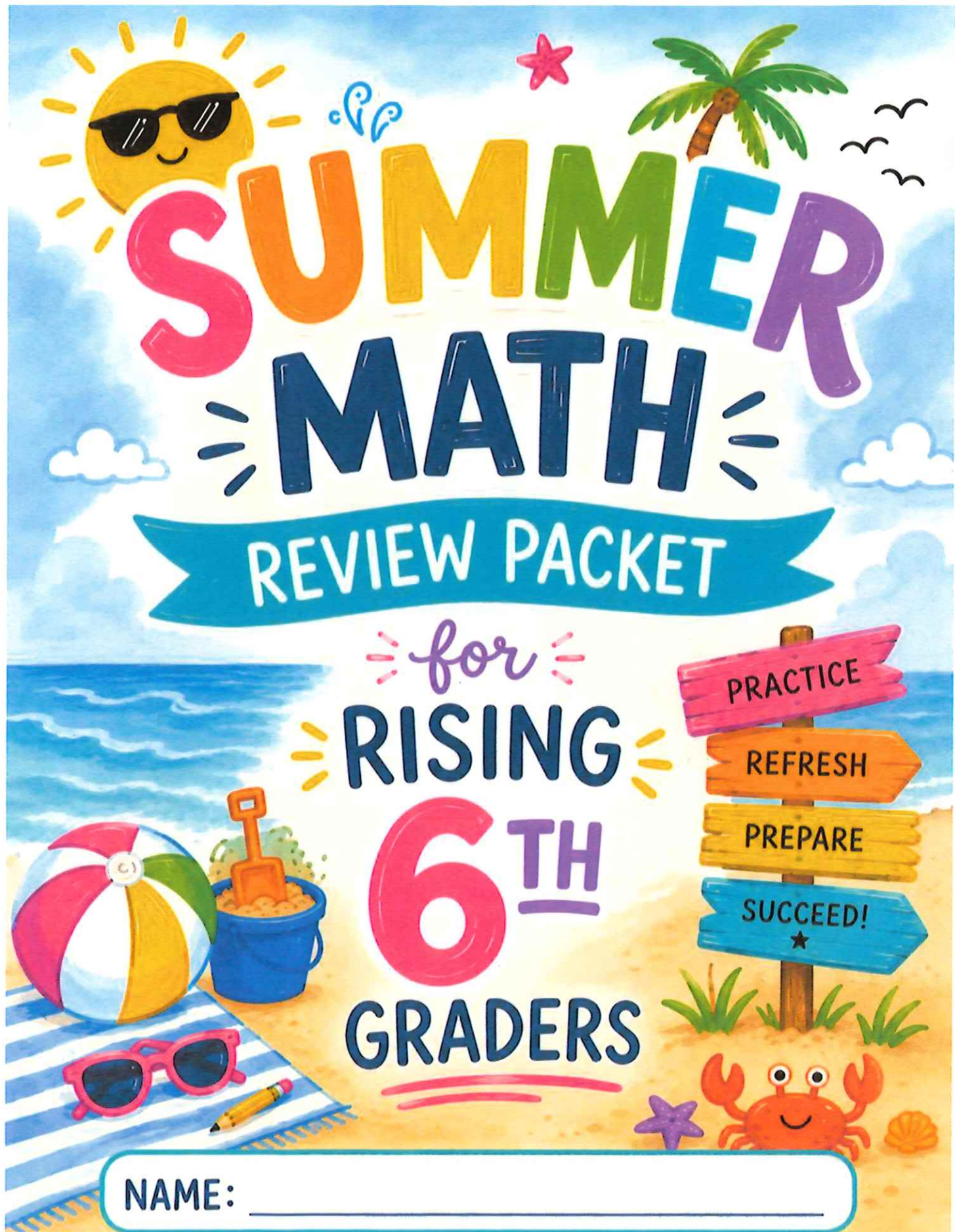




Dear Parents and Guardians,

As we begin summer break, we want to thank you for your partnership and support throughout the school year. We are incredibly proud of the growth and hard work our students have shown in mathematics from kindergarten through eighth grade.

To help students maintain and strengthen their math skills over the summer, we are sending home a Summer Math Review Packet. Research consistently shows that students can experience “summer learning loss” when academic skills are not practiced regularly during the break. Even a small amount of consistent review can make a tremendous difference in helping students retain important concepts and begin the new school year with confidence.

We encourage students to work on a few problems from each worksheet every week rather than trying to complete the entire packet all at once. Short, regular practice sessions are far more effective for long-term learning and help students build strong problem-solving habits. Just 15–20 minutes of math review several times a week can keep skills sharp and reduce frustration when school resumes in the fall.

As your child works through the packet, encourage them to:

- Show their work and explain their thinking
- Take their time and check their answers
- Ask questions when they are unsure
- Practice perseverance with challenging problems

Math is a skill that grows with practice, and your encouragement at home plays an important role in your child’s success. We hope this packet serves as a helpful tool to keep learning active throughout the summer months.

Thank you for your continued support. We wish your family a safe, relaxing, and enjoyable summer!

Sincerely,
St. John’s Math Teachers

Dear Rising 6th Grade Math Superstars,

Congratulations — you made it through another year of math! You survived fractions, decimals, multiplication, division, word problems, integers, equations, and maybe even a few moments where you dramatically whispered, “When will I ever use this?”

Now it’s summer! Time for sleeping in, swimming, vacations, popsicles, video games, and staying up way too late. But before you completely forget what a denominator is, I have one small mission for you:

Please work on your math packet a little bit each week over the summer.

Notice I said *a little bit*. This is NOT meant to be a “do the whole packet in one night before school starts” adventure movie. Your brain works much better when you practice a few problems at a time. Try doing some problems from each page every week so your math skills stay strong all summer long.

And remember — you are NOT alone! You have lots of tools to help you:

- your math notes
- examples from class
- helpful hints in the back of the review packet
- your amazing math brain
- maybe even a helpful grown-up nearby

(But probably not your dog. Dogs are terrible at long division.)

If you get stuck, don’t panic. Look back at your notes and remind yourself how we solved problems during the year. That’s exactly why we kept all those papers!

The students who practice math over the summer usually feel much more confident in September. The math next year will be more challenging, but this packet will help your brain stay ready for action. Think of it like a training camp for your math muscles.

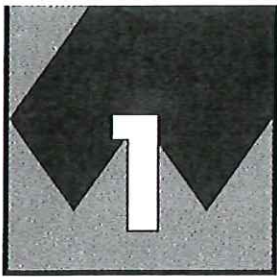
By the time school starts again, you’ll be more prepared, more confident, and ready to tackle new challenges like the math champions you are.

Have an amazing summer, stay safe, have fun, and don’t forget to give your brain a little math exercise along the way!

See you in September!

Mrs. Travis





Name _____ Date _____

Chapter 1 Test, Form 2C

Find the next three numbers in each pattern.

1. 51, 21, 51, ?, ?, ?

1. _____

2. 29, 27, 25, ?, ?, ?

2. _____

3. 15, 30, 60, ?, ?, ?

3. _____

4. 6, 10, 14, ?, ?, ?

4. _____

Round each number to the underlined place-value position.

5. 83

5. _____

6. 66

6. _____

7. 178

7. _____

8. 767

8. _____

Estimate using rounding.

9. $375 + 422$

9. _____

10. $4,267 - 1,976$

10. _____

11. 37×6

11. _____

12. $61 \div 9$

12. _____

Find the value of each expression.

13. $37 - 6 \times 2$

13. _____

14. $40 + 6 \div 2$

14. _____

15. $3 \times 4 - 2 \times 2$

15. _____

16. $9 \times 6 + 6$

16. _____

Evaluate each expression if $a = 5$, $b = 8$, and $c = 6$.

17. $a + b$

17. _____

18. ac

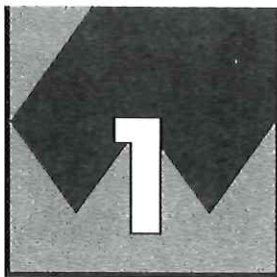
18. _____

19. $2a + 4$

19. _____

20. $2b - a$

20. _____



Chapter 1 Test, Form 2C (continued)

Evaluate.

21. 9^2 21. _____

22. a^3 if $a = 4$ 22. _____

23. seven squared 23. _____

24. $2^2 + 5$ 24. _____

Identify the solution to each equation from the list given.

25. $x - 5 = 15$; 10, 20, 30 25. _____

26. $24 \div x = 3$; 6, 8, 10 26. _____

27. $p - 7 = 15$; 20, 21, 22 27. _____

28. $48 \div s = 6$; 6, 7, 8 28. _____

Solve each equation mentally.

29. $7t = 63$ 29. _____

30. $r + 5 = 31$ 30. _____

31. $a - 9 = 10$ 31. _____

32. The sum of a number and its double is 21. Use the guess-and-check strategy to find the number. 32. _____

33. On Saturday 221 adults were at the swim club. On Sunday there were 198 adults. How many more adults were at the swim club on Saturday than on Sunday? 33. _____



Name _____ Date _____

Chapter 2 Test, Form 2C

Refer to the frequency table.

Test Scores	
Interval	Frequency
0–59	2
60–69	4
70–79	10
80–89	8
90–100	12

1. How many students got 80 or higher on their test?
2. Can you tell from the table if any students got a 100 on their test?
3. Can you tell from the table how many students got 69 or lower on their test? If so, how many?

1. _____

2. _____

3. _____

Money earned by five friends: Terri, \$22; Juan, \$18; Sonja, \$25; Jamaal, \$30; Ida, \$16

4. Make a stem-and-leaf plot for the data.
5. What is the range of the data?
6. Make a vertical bar graph showing these data.

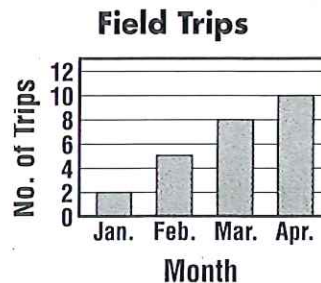
4. _____

5. _____

6. _____

Refer to the bar graph.

7. In what month were the least field trips?
8. What was the total number of field trips in February?



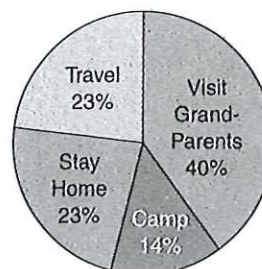
7. _____

8. _____

Refer to the circle graph.

9. Which type of vacation is the most popular?
10. Which two types of vacation are equal in popularity?

Favorite Vacations



9. _____

10. _____

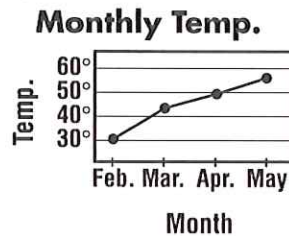


Chapter 2 Test, Form 2C (continued)

The gas mileage per gallon for a car is shown for five months: Jan., 17 mpg; Feb., 20 mpg; Mar., 20 mpg; Apr., 22 mpg; May, 21 mpg. Use the data to find the following.

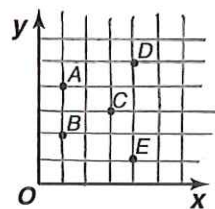
11. mean 11. _____
12. median 12. _____
13. mode 13. _____
14. Use the gas mileage data above to make a line graph. 14. _____
15. Name one way to make your graph misleading. 15. _____
16. Does the mean, median, or mode best describe the data?
2, 59, 60, 61? 16. _____

Refer to the line graph.



17. Predict the average January temperature. 17. _____
18. Predict the average June temperature. 18. _____

Refer to the grid.



19. Name the point for the ordered pair (1, 4). 19. _____
20. Name the ordered pair for point C. 20. _____



Name _____ Date _____

Chapter 3 Test, Form 2C

Write each fraction or mixed number as a decimal.

1. $\frac{29}{100}$

2. $\frac{17}{1,000}$

3. $3\frac{7}{10}$

4. $\frac{19}{10,000}$

5. seventy-four and nineteen thousandths

6. three hundred seven ten-thousandths

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Measure each line segment to the nearest centimeter.

7. _____

8. _____

7. _____

8. _____

Measure each line segment to the nearest millimeter.

9. _____

10. _____

9. _____

10. _____

11. Estimate the length of a standard light bulb using the metric system.

11. _____

State the greatest number in each group.

12. 0.003 or 0.01

13. 0.3, 0.1, or 0.2

14. 0.65, 0.6, or 0.06

15. Order the set of decimals from least to greatest:
0.0009, 0.08, 0.007, 0.6.

16. Order the set of decimals from greatest to least: 1.9, 1.99, 1.09.

12. _____

13. _____

14. _____

15. _____

16. _____



Chapter 3 Test, Form 2C (continued)

Round each number to the underlined place-value position.

17. 71.89

17. _____

18. 0.9339

18. _____

19. 19.39

19. _____

20. Round \$1.89 to the nearest dollar.

20. _____

Estimate. Use any method.

21. $4.9 + 5.1$

21. _____

22. $\$11.98 - \4.07

22. _____

23. $1.983 + 2.0548 + 1.7891 + 2.003$

23. _____

24. $4.5 - 1.7$

24. _____

25. $12.8 + 3.25$

25. _____

Add or subtract.

26. $17.9 + 28.06$

26. _____

27. $38.79 - 7.9$

27. _____

28. $86 - 3.7$

28. _____

29. $\$21.60 + \93.52

29. _____

30. Find the sum of 3.7 and 4.37.

30. _____

31. Evaluate $a + b$ if $a = 5.896$ and $b = 2.104$.

31. _____

Solve.

32. Jorge bought a shirt for \$16.95 and paid for it with a \$20 bill. Should he expect about \$3 or \$5 in change?

32. _____

33. Three same-priced items were purchased. Based on rounding, the estimate for the total was \$18. What is the minimum price each item could have cost?

33. _____



Name _____ Date _____

Chapter 4 Test, Form 2C

1. Estimate: 53×1.8 .

1. _____

Multiply.

2. 86×4.1

2. _____

3. 24×3.99

3. _____

4. 6.34×1.5

4. _____

5. Solve $x = 29.3 \times 7.4$.

5. _____

Find each product mentally. Use the distributive property.

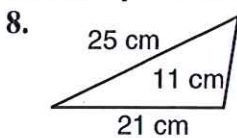
6. 104×6

6. _____

7. 20.4×6

7. _____

Find the perimeter of each figure.

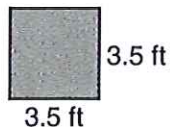


8. _____

9. rectangle:
length, 18 m
width, 11 m

9. _____

10. Find the area of the square.



10. _____

Find each quotient.

11. $7 \overline{)9.45}$

11. _____

12. $61.94 \div 19$

12. _____

13. $3.3 \div 1.1$

13. _____

14. $157.29 \div 32.1$

14. _____



Chapter 4 Test, Form 2C (continued)

Find each quotient.

15. $16.362 \div 8.1$

15. _____

16. $208.052 \div 5.2$

16. _____

Round each quotient to the nearest tenth.

17. $7.6 \div 6$

17. _____

18. $148.8 \div 56$

18. _____

19. Evaluate $a \div b$ if $a = 9.64$ and $b = 40$.

19. _____

Write the unit that you would use to measure each of the following. Then estimate the mass or capacity.

20. mass of a pencil

20. _____

21. capacity of a bathtub

21. _____

Complete.

22. $294 \text{ mL} = \underline{\quad} \text{ L}$

22. _____

23. $\underline{\quad} \text{ g} = 7.2 \text{ kg}$

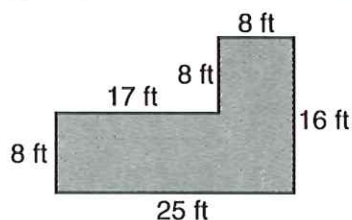
23. _____

24. A room is 20 feet long by 12.5 feet wide. How many square feet of carpeting are needed to cover the floor?

24. _____

25. Barney is seeding his yard. How much area does his yard cover?

25. _____





Name _____ Date _____

Chapter 5 Test, Form 2C

State whether each number is divisible by 2, 3, 5, 6, 9, or 10 for Questions 1–3.

1. 110 1. _____
2. 204 2. _____
3. 108 3. _____
4. How many 3-digit numbers can you make using the digits 6, 7, and 8 if digits can be repeated? 4. _____

Find the prime factorization of each number for Questions 5–7.

5. 80 5. _____
6. 105 6. _____
7. 30 7. _____
8. List all of the factors of 44. 8. _____

Find the GCF of each pair of numbers.

9. 40, 60 9. _____
10. 35, 56 10. _____

State whether each fraction or ratio is in simplest form. If not, write each fraction or ratio in simplest form.

11. $\frac{62}{100}$ 11. _____
12. 18 to 25 12. _____
13. 3:16 13. _____
14. $\frac{40}{50}$ 14. _____

Express each fraction as a mixed number.

15. $\frac{41}{5}$ 15. _____
16. $\frac{27}{8}$ 16. _____



Chapter 5 Test, Form 2C (continued)

Express each mixed number as an improper fraction for Questions 17–18.

17. $3\frac{7}{8}$

18. $10\frac{2}{3}$

17. _____

19. Find the length of the segment to the nearest eighth inch.

18. _____

20. Complete: 36 inches = ? yard(s).

19. _____

20. _____

Find the LCM for each pair of numbers.

21. 15, 25

21. _____

22. 16, 20

22. _____

23. 6, 15

23. _____

Replace each $\bullet$ with $<$, $>$, or $=$ to make a true sentence.

24. $\frac{25}{50} \bullet \frac{5}{10}$

24. _____

25. $\frac{5}{12} \bullet \frac{3}{8}$

25. _____

26. $\frac{3}{10} \bullet \frac{9}{25}$

26. _____

Express each decimal as a fraction in simplest form.

27. 0.16

27. _____

28. 1.35

28. _____

29. 0.9

29. _____

**Express each fraction as a decimal for Questions 30–32.
Use bar notation to show a repeating decimal.**

30. $\frac{21}{25}$

30. _____

31. $\frac{1}{18}$

31. _____

32. $\frac{23}{50}$

32. _____

33. One board is 48 inches long and another board is 36 inches long. Both boards are to be cut into pieces having the same length. What is the longest length possible for the pieces if both entire boards are used?

33. _____



Name _____ Date _____

Chapter 6 Test, Form 2C

Round each number to the nearest half.

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

1. _____

2. $5\frac{10}{11}$

2. _____

3. $\frac{15}{32}$

3. _____

4. $1\frac{1}{10}$

4. _____

5. Carlos is going to hang curtains in a window that is $38\frac{1}{2}$ inches long. When he buys curtains, should he round $38\frac{1}{2}$ up or down to determine the proper curtain length?

5. _____

Estimate.

6. $6\frac{15}{16} - 1\frac{1}{8}$

6. _____

7. $\frac{24}{25} + \frac{7}{8}$

7. _____

8. $\frac{17}{18} + 3\frac{9}{10}$

8. _____

9. $3\frac{1}{3} - 1\frac{1}{5}$

9. _____

Add or subtract. Write the answer in simplest form.

10. $\frac{5}{14} + \frac{2}{14}$

10. _____

11. $\frac{1}{8} + \frac{4}{8}$

11. _____

12. $\frac{1}{2} + \frac{3}{8}$

12. _____

13. $\frac{2}{3} - \frac{1}{2}$

13. _____

14. $4\frac{3}{4} - 2\frac{1}{4}$

14. _____

15. $3\frac{9}{10} + 1\frac{5}{10}$

15. _____

16. $7\frac{1}{10} + 4\frac{3}{10}$

16. _____

17. $6 - 3\frac{1}{3}$

17. _____

18. $4\frac{1}{6} - 2\frac{1}{2}$

18. _____



Chapter 6 Test, Form 2C (continued)

Add or subtract. Write the answer in simplest form.

19. $3\frac{1}{6} - 1\frac{3}{4}$

19. _____

20. $6\frac{11}{12} - 2\frac{1}{6}$

20. _____

21. $\frac{3}{8} + \frac{5}{24} + \frac{1}{3}$

21. _____

22. $9\frac{2}{3} + 2\frac{1}{6}$

22. _____

23. Renee needs $\frac{3}{4}$ cup of sour cream for a recipe. Sour cream is sold in $\frac{1}{2}$ cup and 1 cup containers. Which container should Renee choose?

23. _____

Solve each equation. Write the solution in simplest form.

24. $m = \frac{19}{20} - \frac{9}{20}$

24. _____

25. $y = \frac{5}{18} + \frac{7}{18}$

25. _____

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

26. _____

27. $b = 7\frac{1}{3} - 5\frac{2}{3}$

27. _____

28. A sheet of glass is $\frac{1}{16}$ inch thick. The glass sits on a piece of wood that is $\frac{5}{8}$ inch thick. What is the total thickness of the glass and wood?

28. _____

29. A movie starts at 7:40 P.M. and ends at 9:20 P.M. How long is the movie?

29. _____

Add or subtract.

30.
$$\begin{array}{r} 3 \text{ h } 45 \text{ min} \\ + 2 \text{ h } 20 \text{ min} \\ \hline \end{array}$$

30. _____

31.
$$\begin{array}{r} 1 \text{ h } 5 \text{ min } 3 \text{ s} \\ + 2 \text{ h } 22 \text{ min } 7 \text{ s} \\ \hline \end{array}$$

31. _____

32.
$$\begin{array}{r} 2 \text{ h } 15 \text{ min} \\ - 1 \text{ h } 12 \text{ min} \\ \hline \end{array}$$

32. _____

33. Caroline watched TV from 7:30 P.M. until 10:00 P.M. How long did she watch TV?

33. _____



Name _____ Date _____

Chapter 7 Test, Form 2C

Estimate.

1. $\frac{1}{5} \times 29$

2. $\frac{9}{10} \times \frac{3}{5}$

3. $4\frac{7}{8} \times 3\frac{1}{6}$

4. $1\frac{1}{8} \times 3\frac{4}{5}$

1. _____

2. _____

3. _____

4. _____

Find each product. Write in simplest form.

5. $\frac{5}{18} \times \frac{3}{10}$

6. $24 \times \frac{3}{8}$

7. $5\frac{1}{3} \times \frac{3}{8}$

8. $3\frac{3}{8} \times 1\frac{1}{3}$

5. _____

6. _____

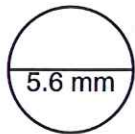
7. _____

8. _____

Find the circumference of each circle.

9. The diameter is 6.5 feet.

10.



9. _____

10. _____

11. The radius is 14 meters.

11. _____

Find each quotient. Write in simplest form.

12. $\frac{8}{25} \div \frac{4}{5}$

13. $\frac{14}{19} \div 7$

14. $\frac{17}{21} \div \frac{3}{7}$

15. $3\frac{1}{2} \div 2\frac{1}{4}$

16. $1\frac{3}{8} \div 1\frac{3}{4}$

17. $2\frac{4}{7} \div 9$

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____



Chapter 7 Test, Form 2C (continued)

Find the next two numbers in each sequence.

18. 320, 160, 80, 40, ...

18. _____

19. $27, 28\frac{1}{2}, 30, 31\frac{1}{2}, \dots$

19. _____

20. $14, 17\frac{1}{2}, 21, 24\frac{1}{2}, \dots$

20. _____

21. 999, 333, 111, $\frac{111}{3}, \dots$

21. _____

Solve each equation. Write the solution in simplest form.

22. $z = 10 \div 1\frac{1}{4}$

22. _____

23. $a = \frac{3}{7} \div \frac{1}{2}$

23. _____

24. $w = 9 \div 2\frac{1}{4}$

24. _____

25. $d = \frac{1}{8} \div \frac{5}{12}$

25. _____

26. $3\frac{1}{7} \times 5\frac{1}{4} = j$

26. _____

27. $5\frac{1}{4} \times 2\frac{6}{7} = m$

27. _____

Complete.

28. 2 qt = ? c

28. _____

29. 3 lb = ? oz

29. _____

30. 10,000 lb = ? T

30. _____

31. $7\frac{1}{2}$ T = ? lb

31. _____

32. A recipe for cookies calls for $\frac{3}{4}$ cup of milk. Dwayne plans to make only half a recipe. How much milk should he use?

32. _____

33. A certain bacteria doubles each hour. The first hour there are 2. The second hour there are 4. The third hour there are 8. How many will there be the sixth hour?

33. _____



Name _____ Date _____

Chapter 8 Test, Form 2C

Write each ratio as a fraction in simplest form.

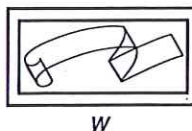
1. 18 shots made out of 40 attempted 1. _____
2. 2 winners out of 50 players 2. _____

Express each ratio as a rate.

3. 240 miles on 8 gallons of gasoline 3. _____
4. 180 students for 6 classes 4. _____
5. 16 feet in 2 seconds 5. _____

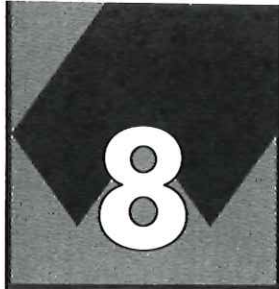
Solve each proportion.

6. $\frac{n}{3} = \frac{5}{15}$ 6. _____
7. $\frac{5}{10} = \frac{h}{14}$ 7. _____
8. $\frac{10}{12} = \frac{15}{m}$ 8. _____
9. $\frac{7}{f} = \frac{14}{16}$ 9. _____
10. $\frac{g}{24} = \frac{15}{36}$ 10. _____
11. The scale drawing of a poster is shown at the right. The scale is $\frac{1}{2}$ in. = 1 ft. What is the actual width labeled w ? 11. _____
12. On a map, the scale is 1 cm = 10 km. If the map distance between Montgomery and Indian Hill is 2 centimeters, what is the actual distance? 12. _____
13. On a map, the scale is 1 in. = 5 mi. If the distance on the map between two cities is 2 inches, what is the actual distance? 13. _____



Express each fraction as a percent.

14. $\frac{1}{2}$ 14. _____
15. $\frac{3}{10}$ 15. _____
16. $\frac{42}{100}$ 16. _____



Chapter 8 Test, Form 2C (continued)

Express each percent as a fraction in simplest form and as a decimal.

17. 75% 17. _____

18. 12% 18. _____

19. 10% 19. _____

Express each decimal as a percent.

20. 0.84 20. _____

21. 0.62 21. _____

22. 0.07 22. _____

Estimate each percent.

23. 10% of 203 23. _____

24. 25% of 406 24. _____

25. 50% of 248 25. _____

26. 30% of 59 26. _____

27. 75% of 119 27. _____

Find the percent of each number.

28. 15% of 140 28. _____

29. 64% of 25 29. _____

30. 75% of 20 30. _____

31. 40% of 120 31. _____

32. 25% of 800 32. _____

Solve by drawing a diagram.

33. Sabrina and her father are building a kennel for their dog. They need to put posts every 2 feet. If the kennel is 6 feet by 4 feet, how many posts do they need? (*Hint: Don't forget the corner posts.*) 33. _____

For Questions 1 and 2, round each number to the nearest half.

1. $3\frac{3}{14}$

1. _____

2. $\frac{5}{12}$

2. _____

3. **BLIMP** Jayne is in charge of inflating a blimp to fly over a baseball game. Should she round the amount of helium she uses up or down?

3. _____

4. **RUNNING** Chun runs at a rate of 20 feet every 5 seconds while Jonas runs at a rate of 15 feet every 5 seconds. If Jonas has a head start of 40 feet, after how many seconds will they be at the same spot?

4. _____

For Questions 5–7, add or subtract. Write in simplest form.

5. $\frac{7}{12} - \frac{5}{12}$

5. _____

6. $\frac{5}{6} + \frac{1}{2}$

6. _____

7. $\frac{5}{6} - \frac{2}{9}$

7. _____

8. Find the sum of $\frac{3}{5}$, $\frac{2}{5}$ and $\frac{4}{5}$.

8. _____

9. How much more is $\frac{7}{8}$ inch than $\frac{3}{16}$ inch?

9. _____

10. **EXERCISE** Ramon walked $\frac{3}{8}$ mile from his house to his friend's house. Then Ramon and his friend walked another $\frac{2}{5}$ mile to the bus stop. How far did Ramon walk?

10. _____

Add or subtract. Write in simplest form.

11. $8\frac{11}{12} - 3\frac{5}{12}$

11. _____

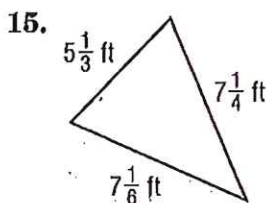
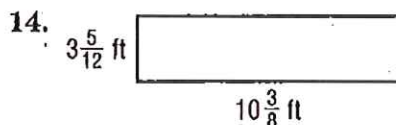
12. $9\frac{3}{7} + 5\frac{4}{9}$

12. _____

13. $15 - 3\frac{4}{9}$

13. _____

For Questions 14–16, find the perimeter of each figure.



14. _____

15. _____

16. ALGEBRA Evaluate $b - a$ if $a = 5\frac{5}{6}$ and $b = 8\frac{3}{4}$.

16. _____

Multiply. Write in simplest form.

17. $\frac{11}{12} \times \frac{8}{9}$

17. _____

18. $\frac{3}{4} \times \frac{2}{3} \times \frac{7}{9}$

18. _____

19. $4\frac{4}{9} \times 2\frac{3}{8}$

19. _____

20. TOYS Each level of a dollhouse uses the same amount of wallpaper. If a 4-level dollhouse uses $3\frac{1}{3}$ feet of wall paper, how much wallpaper would a 3-level dollhouse use?

20. _____

For Exercises 21–24, divide. Write in simplest form.

21. $\frac{6}{7} \div 9$

21. _____

22. $\frac{7}{9} \div \frac{5}{12}$

22. _____

23. $6\frac{1}{2} \div 3\frac{1}{4}$

23. _____

24. FOOD There are $10\frac{2}{3}$ cups of juice to be divided among some children. If each child gets $1\frac{1}{3}$ cups of juice, how many children are there?

24. _____

For Exercises 25 and 26, evaluate each expression if $a = 4\frac{4}{5}$, $b = \frac{2}{3}$ and $c = 1\frac{1}{2}$.

25. bc

25. _____

26. $b \div a$

26. _____

Bonus What number makes this equation true?

$$12\frac{1}{9} - \bullet = 2\frac{1}{2}$$

B: _____

Write each ratio as a fraction in simplest form.

1. 60 fish to 440 frogs

1. _____

2. 35 shots made out of 55 attempted

2. _____

Write each ratio as a unit rate.

3. 162 heartbeats in 60 seconds

3. _____

4. 135 push-ups in 6 minutes

4. _____

5. **MONEY** Lamar earns an allowance of \$4 each week. How much does he earn every 4 weeks?

5. _____

Allowance	4			
Number of Weeks	1			4

6. **FIELD TRIP** There must be 1 adult for every 9 students going to the art museum. If there are 54 students in the sixth grade going on the field trip, how many adults must attend?

6. _____

Number of Adults	1			
Number of Students	9			54

Determine if the quantities in each pair of ratios or rates are proportional. Explain your reasoning and express each proportional relationship as a proportion.

7. \$3 for 10 folders; \$6 for 24 folders

7. _____

8. \$168 raised for washing 24 cars; \$280 raised for washing 40 cars

8. _____

Solve each proportion.

9. $\frac{z}{14} = \frac{48}{168}$

9. _____

10. $\frac{60}{y} = \frac{180}{120}$

10. _____

11. $\frac{64}{16} = \frac{b}{4}$

11. _____

6**Chapter 6 Test, Form 3** (continued)

- 12. NUMBER SENSE** Find the missing number in the pattern below.

8, ■, 72, 216, 648

12. _____

- 13. MONEY** In 2002, Lindsay earned \$21,500 per year, and Rondell earned \$23,000 per year. Each year, Rondell received a \$1,000 raise, and Lindsay received a \$1,500 raise. In what year will they earn the same amount of money? How much will it be?

13. _____

Use the table below for Questions 14–16.

Position	1	2	3	4	n
Value of Term	9	18	27	36	■

- 14.** Use words to describe the value of each term as a function of its position.
- 15.** Use symbols to describe the value of each term as a function of its position.
- 16.** Find the value of the sixteenth term in the sequence.
- 17. DVDs** Carlos spent \$36 on 4 DVDs. At this rate, how much would 7 DVDs cost?

14. _____

15. _____

16. _____

17. _____

For Questions 18–20, write an equation to represent the function displayed in each table.

18.

Input, x	1	2	3	4	5
Output, y	5	10	15	20	25

18. _____

19.

Input, x	0	1	2	3	4
Output, y	0	7	14	21	28

19. _____

20.

Input, x	1	2	3	4	5
Output, y	14	28	42	56	70

20. _____

Bonus What expression was used to create the table at the right?

Position	Value of Term
1	5
2	7
3	9
n	■

B: _____

Write each percent as a decimal and as a fraction in simplest form.

1. 6%

1. _____

2. 0.8%

2. _____

3. 230%

3. _____

Write each fraction or decimal as a percent.

4. $\frac{16}{25}$

4. _____

5. $\frac{28}{50}$

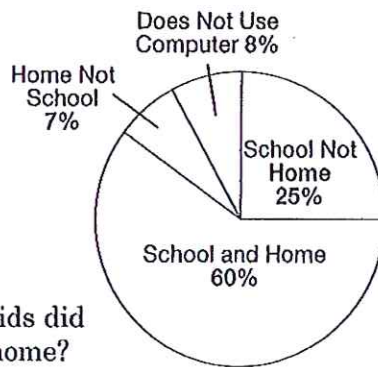
5. _____

6. 0.15

6. _____

COMPUTERS Refer to the circle graph.

Computer Use by 10- to 13-year-olds



7. What total percent of kids used a computer at home?

7. _____

8. What percent of kids used a computer only at school?

8. _____

9. What total percent of kids did *not* use a computer at home?

9. _____

10. What total percent of kids used a computer?

10. _____

For Questions 11–15 use the following information. A set of 12 cards is numbered 1 to 12. One card is randomly chosen. Find the probability of each event. Write each answer as a fraction, a decimal, and a percent.

11. $P(1 \text{ or } 5)$

11. _____

12. $P(\text{multiple of } 3)$

12. _____

13. $P(\text{not greater than } 6)$

13. _____

14. $P(\text{not } 1)$

14. _____

15. $P(\text{less than } 13)$

15. _____

7

Chapter 7 Test, Form 3 (continued)

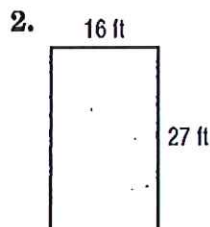
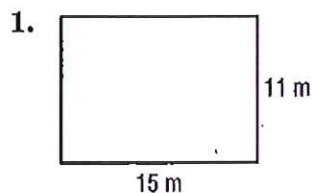
16. **WEATHER** There is a 30% chance of rain on Saturday and a 40% chance on Sunday. What is the probability it will not rain at all on the weekend? 16. _____
17. How many different ways can a person choose 3 out of 5 markers? 17. _____
18. **POPCORN** By experimenting, Dave finds that 96% of his popcorn kernels pop when he cooks them. If he cooks 125 kernels, predict how many will *not* pop. 18. _____
19. **FOOD** On the nightly special, you can order lasagna, spaghetti, or ravioli, with green salad, soup, or garlic bread. Use the Fundamental Counting Principle to determine the number of possible outcomes. Then, draw a tree diagram of the sample space. 19. _____

SURVEYS Tessa surveys students in her class to find their favorite number less than 8.

Favorite Number	
Number	Students
1	4
2	5
3	2
4	1
5	5
6	1
7	12

20. A classmate is chosen at random. What is the probability that his or her favorite number is less than 5? 20. _____
21. If there are 420 students at Tessa's school, predict the number of students whose favorite number in the given range is not 7. 21. _____
22. **SHOPPING** A store has green, blue, yellow, and orange socks in either cotton or poly-blend. If Josh's mom picks one style at random, what is the probability she will pick a green or blue cotton pair? 22. _____
- Estimate each percent.** 23. _____
23. 32% of 19
24. 76% of 123 24. _____
25. **SALES TAX** The sales tax is 8.5%. Estimate how much tax will be charged for a purchase totaling \$42.99. 25. _____
- Bonus** In a board game, two number cubes are rolled at the same time. Each game, every player gets 30 rolls. Predict how many times in one game a player will roll "doubles" (where the same number is rolled on both cubes). **B:** _____

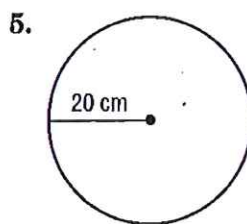
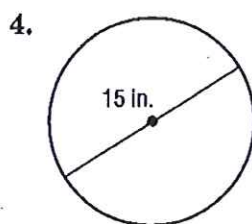
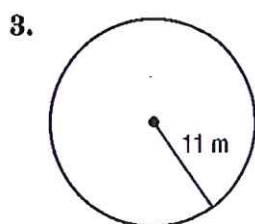
Find the perimeter of each figure.



1. _____

2. _____

Estimate the circumference of each circle.



3. _____

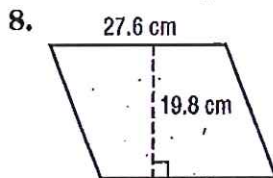
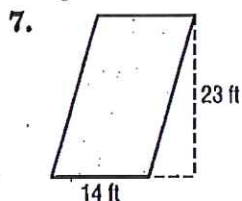
4. _____

5. _____

6. Find the circumference of a Ferris wheel with a diameter of 45 feet. Use 3.14 for π . Round to the nearest tenth.

6. _____

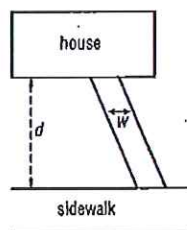
For Questions 7 and 8, find the area of each parallelogram.



7. _____

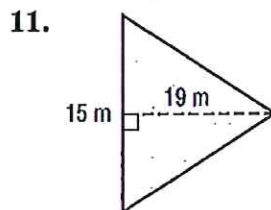
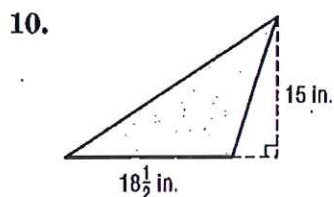
8. _____

9. **CONSTRUCTION** Greg is painting a wooden pathway with special paint mixed with sand so it is less slippery. The path connects the sidewalk to the house, as shown in the picture at the right. If w is $\frac{2}{3}$ of a yard and d is $6\frac{1}{8}$ yards, what is the approximate area Greg paints?



9. _____

For Questions 10 and 11, find the area of each triangle.



10. _____

11. _____

12. Find the volume of a rectangular prism whose sides measure 7 yards, 9 yards, and 12 yards.

12. _____

10**Chapter 10 Test, Form 3** (continued)

- 13. CANS** A grocer is stacking cans of vegetables into a pyramid-shaped display. The bottom row has 7 cans. There is one less can in each row and there are 6 rows. How many cans are in the display?

13. _____

- 14. ART** Alicia is making an abstract painting called "Tangled Triangles" that compares triangles to people. Her idea is to make the triangles look different on the outside by using different lengths for the sides, but to make the area inside the same for each one. One triangle has a base of 3 inches and a height of 8 inches. If another triangle in the picture has a base of 4 inches, what is its height?

14. _____

- 15. RECYCLING** Kira's family saves a stack of newspapers to be recycled each month. The base of the stack is 11 inches by 12 inches, the size of a folded newspaper. If the stack's height is an average of 15 inches each month, what is the volume of newspaper Kira's family recycles per year?

15. _____

- 16. SCHOOL** Ben's class collects 24,000 cubic inches of newspaper during their recycling drive. They stack it in a bin that is about 24 inches by 25 inches. How high is the stack?

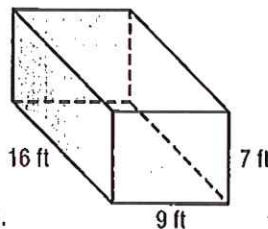
16. _____

- 17.** Find the surface area of the rectangular prism at the right.

17. _____

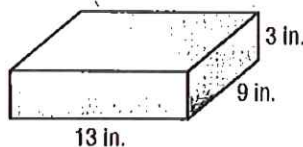
- 18.** Find the surface area of a rectangular prism whose sides measure 9 yards, 13 yards, and 6 yards.

18. _____



- 19. BIRTHDAYS** Hiram makes a birthday cake as shown at the right. If he frosts the top and the sides of the cake, how much surface area will he cover with frosting?

19. _____



- 20.** Determine whether the following statement is true or false, and provide an example (or counterexample) to support your conclusion. *If two figures have the same volume, then they must have the same surface area.*

20. _____

Bonus ESTIMATION A box of milk has a rectangular base that measures 2.25 inches by 3.5 inches and is 6.75 inches tall. If a quart is 57.75 cubic inches, will the box contain a quart of milk? Explain.

B: _____

Replace each $\bullet$ with $<$, $>$, or $=$ to make a true sentence.

1. $-8 \bullet -9$

2. $1 \bullet -4$

3. Order -7 , 4 , -2 , 0 , and -5 from greatest to least.

4. Is the following statement true or false? *Any integer that is not negative is always greater than its opposite.* If it is false, provide a counterexample. If it is true, provide an example.

For Questions 5–7, add. Use counters or a number line if necessary.

5. $-9 + (+6)$

6. $15 + (-8) + 4$

7. $-5 + (-7)$

For Questions 8–10, subtract. Use counters if necessary.

8. $-12 - 3$

9. $1 - (-9)$

10. $-13 - (-13)$

11. **ALGEBRA** Find the value of $m - n$ if $m = -7$ and $n = -5$.

12. **CATS** Two cats face each other, 6 feet apart. Craze-E Cat advances 4 feet, while Scared-T Cat retreats 2 feet. What is the distance separating the two cats?

For Questions 13–15, multiply.

13. $8(-4)$

14. $(-7)(-8)$

15. $-2 \times 5 \times (-3)$

16. **ALGEBRA** Find the value of $ab - 2$ if $a = 8$ and $b = -9$.

17. **TIME** Jade keeps track of the time she spends reading by lighting a candle when she starts and blowing it out when she finishes. The candle is 8 inches tall to start. It shrinks at a rate of 2 inches per hour burned. If she reads for 3 hours, how tall is the candle at the end?

11**Chapter 11 Test, Form 3** (continued)**For Questions 18–20, divide.**

18. $-36 \div 4$

18. _____

19. $36 \div (-6)$

19. _____

20. $-24 \div (-6)$

20. _____

21. **ALGEBRA** Find the value of c so that $63 \div c = -9$.

21. _____

For Questions 22–24, use the coordinate plane below.22. Identify the point for the ordered pair $(-4, 2)$.

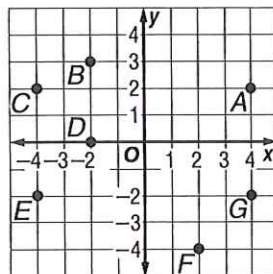
22. _____

23. Write the ordered pair that names point B .

23. _____

24. Write the ordered pair that names point D .

24. _____

25. In which quadrant is the point at $(-4, 5)$ located?

25. _____

Triangle LMN has vertices at $L(-5, 1)$, $M(1, 6)$, and $N(5, -5)$. Find the vertices of the image of each transformation.

26. translated 7 units down

26. _____

27. translated left 4 units and up 3 units

27. _____

28. reflected over the x -axis

28. _____

29. reflected over the y -axis

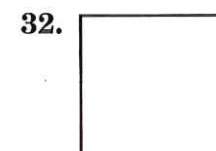
29. _____

30. rotated 270° clockwise about the origin

30. _____

31. **AGE** Dan is 5 years older than Meghan. If Dan is 21 years old, how old is Meghan?

31. _____

Determine whether each figure has rotational symmetry. Write yes or no. If yes, find the angle of rotation.

32. _____

33. _____

Bonus Write two numbers whose product is negative and whose sum is positive.

B: _____

Write the letter for the correct answer in the blank at the right of each question.
Find each expression mentally using the Distributive Property.

1. 4×97

2. 6×154

1. _____

2. _____

Rewrite each algebraic expression using the Distributive Property.

3. $2(x + 8.6)$

3. _____

4. $(15 + r)12$

4. _____

5. $4.1(v + 3.8)$

5. _____

6. $(r + 9)6.2$

6. _____

7. **SHOPPING** Mary bought 7 party favor bags that contained a toy that cost x dollars and candy that cost \$2.15. She also bought a pizza for 12.50. Write and simplify an expression showing the total amount of money spent.

7. _____

Simplify the following algebraic expressions.

8. $13 + t + 9$

8. _____

9. $(y \times 0.2) \times 24$

9. _____

10. $3(x + 7) + x$

10. _____

11. $6(x + 13) + 5(x + 7)$

11. _____

12. $5.4(x + 2) + 12.3 + 2x$

12. _____

MUSIC Use the information to answer Questions 13 and 14.

Music lessons are offered at a local music store for m dollars plus the cost of any items in the table.

Item	Cost
Instrument Rental	\$65.50
Instrument Purchase	\$149.75
Additional Lessons	\$10.00 per $\frac{1}{2}$ hour

13. Joan purchased music lessons with an instrument rental. She then decided to purchase two extra hours of lessons. Write and simplify an expression that shows the total amount she spent.

13. _____

14. Four students purchased music lessons. Three of the students also purchased an instrument, while the fourth rented an instrument and purchased an extra hour of lessons. Write and simplify an expression that shows the total amount spent.

14. _____

Solve.

- | | |
|---|-----------|
| 15. $y + 57 < 17$ | 15. _____ |
| 16. $u - 25 = -11$ | 16. _____ |
| 17. $-8.57 = x + 6.21$ | 17. _____ |
| 18. $4y > -38.24$ | 18. _____ |
| 19. $12 = t - 15$ | 19. _____ |
| 20. MONEY Dwane wants to spend less than \$25.00 at the mall. If he has already spent \$12.85, how much more money can he spend and still be under \$25.00? | 20. _____ |
| 21. $1.5 \times b = 300$ | 21. _____ |
| 22. $x + 42 = -67$ | 22. _____ |
| 23. $17 = 2.5x$ | 23. _____ |
| 24. $r - 12 = -7.1$ | 24. _____ |
| 25. $51 + x + 34 = 118$ | 25. _____ |
| 26. $(t + 23) + (-54) = -17$ | 26. _____ |
| 27. SHOPPING Liam is saving money for a video game machine that costs \$249.99. If he has already saved \$125.00, how much more money does he have left to save? | 27. _____ |
| 28. SAVINGS Every month Dane puts \$50 into savings. How many months will it take for him to save \$2,350? | 28. _____ |
| 29. MEASUREMENT The width of Helen's bed is $5\frac{1}{4}$ feet shorter than the length. If her bed is $8\frac{7}{8}$ feet long, how wide is it? | 29. _____ |
| 30. FUNDRAISING Wendy made \$47.65 selling cookie dough for her school, while Ryan made \$61.68. Who was closer to the school average of \$54.67? | 30. _____ |
| Bonus ALGEBRA Simplify $r(x + v) + v(x + r)$ if $r = -4$ and $v = -8$. B: | _____ |

**Rounding
Whole
Numbers**

Look at the digit to the right of the place being rounded.

- The digit remains the same if the digit to the right is 0, 1, 2, 3, or 4.
- Round up if the digit to the right is 5, 6, 7, 8, or 9.

To round fractions and mixed numbers to the nearest half unit, you can use the following guidelines. If the numerator is almost as large as the denominator, round the number up to the next whole number. If the numerator is about half the denominator, round the fraction to $\frac{1}{2}$. If the numerator is much smaller than the denominator, round the number down to the next whole number.

Estimation is a useful skill that provides a quick answer when an exact answer is not needed.

Estimate the product
of 7 and 64.

$$\begin{array}{r} 64 \rightarrow 60 \\ \times 7 \rightarrow \times 7 \\ \hline 420 \end{array}$$

Estimate the quotient
of 112 and 23.

$$112 \div 23 \rightarrow 20 \overset{5}{\overline{)100}}$$

Estimating Sums and Differences - One way to estimate is to round the amounts to the same place-value position and then add.

To estimate sums and differences of mixed numbers, round each number to the nearest whole number.

One way to estimate the product is to use **compatible numbers**. Compatible numbers are easy to divide mentally.

$$\frac{1}{3} \times 16 = ? \quad \frac{1}{3} \times 16 \text{ means } \frac{1}{3} \text{ of } 16.$$

$$\frac{1}{3} \times 15 = ? \quad \begin{array}{l} \text{Think: For 16, the nearest multiple of 3 is 15.} \\ 3 \text{ and 15 are compatible numbers since } 15 \div 3 = 5. \end{array}$$

$$\frac{1}{3} \times 15 = 5 \quad \text{Multiplying by } \frac{1}{3} \text{ is the same as dividing by 3.}$$

So, the product of $\frac{1}{3}$ and 16 is about 5.

Clustering is another way you can estimate sums and differences. Clustering is used when numbers are close to the same number.

One way to display a large data set to make it easy to read is to construct a **stem-and-leaf** plot. To display the data 25, 8, 14, 25, 12, and 21 in a stem-and-leaf plot, follow these steps.

Step 1 Find the least and greatest number. Identify the tens digit in each.

Step 2 Draw a vertical line and write the tens digits from least to greatest to the left of the line. These digits form the **stems**.

Step 3 Write the units digits to the right of the line, with the corresponding stem. The units digits form the **leaves**.

Step 4 Order the leaves in each row from least to greatest.

Step 5 Include a key or explanation.

Stem	Leaf

Mean	The mean of a set of data is the sum of the data divided by the number of pieces of data.
Median	The median is the middle number when the data are arranged in numerical order.
Mode	The mode of a set of data is the number(s) or item(s) that appear most often.

The range is the difference between the greatest number and the least number in a set of data.

Unit	Symbol	Meaning	Size	Model
millimeter	mm	thousandth	0.001 m	Thickness of a dime
centimeter	cm	hundredth	0.01 m	Width of a large paperclip
meter	m	one	1.0 m	Width of doorway
kilometer	km	thousand	1,000 m	Six city blocks

The basic unit of mass in the metric system is the **gram (gm)**. A **kilogram (kg)** is 1000 grams, and a **milligram (mg)** is 0.001 gram.

Many items you use every day are measured in grams, kilograms, or milligrams.

- A small paper clip has a mass of about 1 gram.
- A textbook has a mass of about 1 kilogram.
- A grain of salt has a mass of about 1 milligram.

The basic unit of capacity in the metric system is the **liter (L)**. A liter is a little more than a quart. The **milliliter (mL)** is 0.001 liter. It takes 1,000 milliliters to make a liter.

- A small pitcher has a capacity of about 1 liter.
- An eyedropper has a capacity of about 1 milliliter.

To change from one unit to another in the metric system, you multiply or divide by powers of 10. The chart below shows the relationship between the units in the metric system and the powers of 10.

1,000	100	10	1	0.1	0.01	0.001
thousands	hundreds	tens	ones	tenths	hundredths	thousandths
kilo	hecto	deka	Base unit	deci	centi	milli

Each place value is 10 times the place to its right.

One of the most commonly used customary units of length is the **inch**. Some others are the **foot**, **yard**, and **mile**.

1 foot (ft) = 12 inches (in)

1 yard (yd) = 3 feet or 36 inches

1 mile (mi) = 5,280 feet or 1,760 yards

To change from one unit to another unit in the customary system, you can use either multiplication or division. When going from a big unit to a small unit, multiply. When going from a small unit to a big unit, divide.

To add or subtract measures of time:

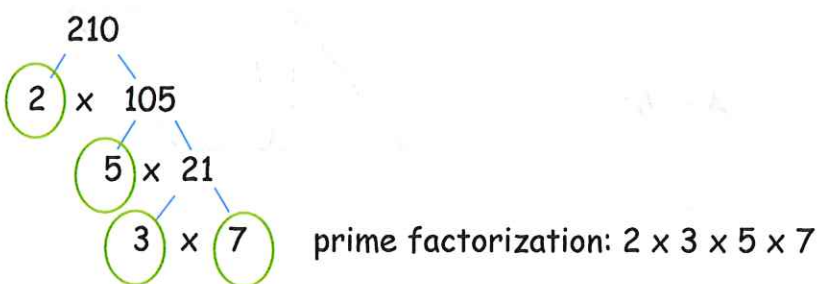
1. Add or subtract the seconds.
2. Add or subtract the minutes.
3. Add or subtract the hours.

Rename if necessary in each step

A number is divisible by . . .	If . . .
2	the ones digit is divisible by 2. All even numbers are divisible by 2.
3	the sum of the digits is divisible by 3.
5	the ones digit is 0 or 5.
6	the number is divisible by both 2 and 3.
9	the sum of the digits is divisible by 9.
10	the ones digit is 0.

Every composite number can be expressed as a product of prime numbers. This is called the **prime factorization** of a number. To find the prime factorization of a number, you can use a **factor tree**.

Example:



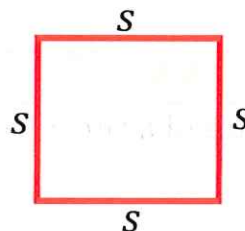
The greatest of the common factors of two or more numbers is called the **greatest common factor** (GCF) of the numbers. So, the greatest common factor of 27 and 45 is 9.

The least common multiple of two or more numbers is called the **least common multiple** (LCM). The least common multiple of 2 and 3 is 6.

Perimeter of a Square

The perimeter P of a square is 4 times the measure of any of its sides s .

$$P = 4s$$

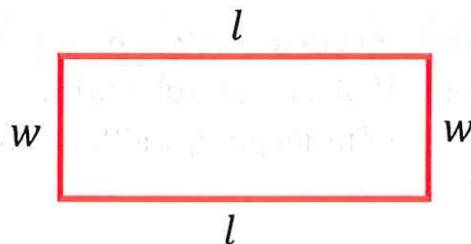


Perimeter of a Rectangle

The perimeter P of a rectangle is the sum of the lengths and widths. It is also two times the length l plus two times the width w .

$$P = l + w + l + w$$

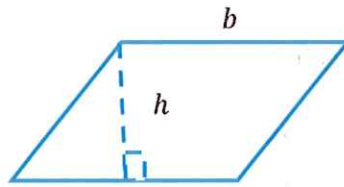
$$P = 2l + 2w$$



Area of a Parallelogram

The area A of a parallelogram is the product of any base b and its height h .

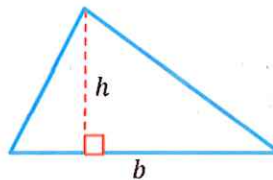
$$A = bh$$



Area of a Triangle

The area A of a triangle is one half the product of the base b and its height h .

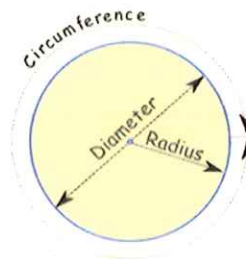
$$A = \frac{1}{2}bh \text{ or } A = \frac{bh}{2}$$



Circumference

The circumference of a circle is equal to π times its diameter or π times twice its radius.

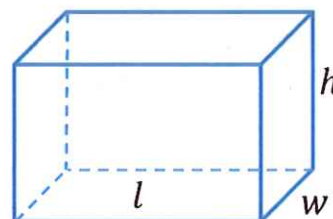
$$C = \pi d \text{ or } C = 2\pi r$$



Volume of a Rectangular Prism

The volume V of a rectangular prism is the product of its length l , width w , and height h .

$$V = lwh$$



Surface Area of a Rectangular Prism

The surface area S of a rectangular prism with length l , width w , and height h is the sum of the areas of the faces.

$$S = 2lw + 2lh + 2wh$$

