Name _____ LESSON 22.4

Problem Solving Strategy: Draw a Diagram

Draw a diagram to solve.

1. Sandra opened a checking account with $200.00. She wrote a check for groceries for $95.00 and a check for clothes for $65.00. Later that week she withdrew $85.00. She balanced her checkbook and realized she had overdrawn her account. How much money did she have to take to the bank to cover her overdraft and maintain a minimum of $50.00 in the account?

_____

2. John went scuba diving and dove to a depth of 30 ft. After a few minutes he realized he had ascended 5 ft. Then he noticed the coral at the bottom so he decided to descend 12 ft. Finally, he ascended 22 ft to feed the fish before returning to the surface. At what depth did he feed the fish?

_____

3. Scott spent 8 hours driving to college. If his average speed was 55 mph, how many miles did Scott drive?

_____

4. There are 12 times as many players as coaches. There are 9 coaches. How many players are there?

_____

5. Mr. Downing went on a 100–day archaeological expedition. He traveled 15 of the days. What fraction of the days did he not travel?

_____

6. There were 63 people in a hotel. Then 7 checked out, and 3 times that number checked in. How many people are in the hotel now?

_____

Mixed Review

Write as a fraction in simplest form.

7. 0.05 _____ 8. 0.29 _____ 9. 0.98 _____

10. 0.14 _____ 11. 0.75 _____ 12. 0.33 _____

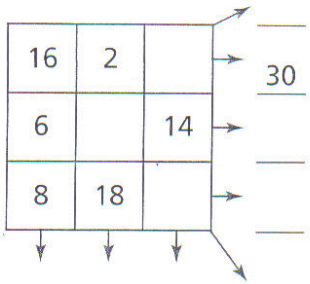
Name _____ Date _____

Practice
Lesson 3.2

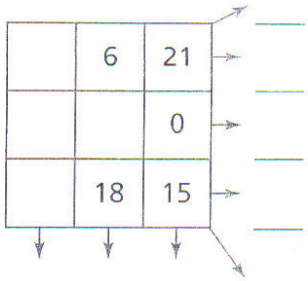
Completing Magic Squares

Complete these magic squares so that every row, column, and diagonal has the same sum.

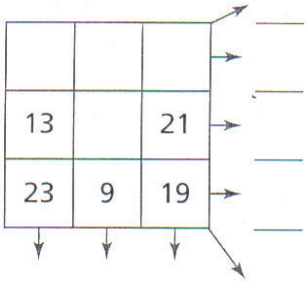
1.



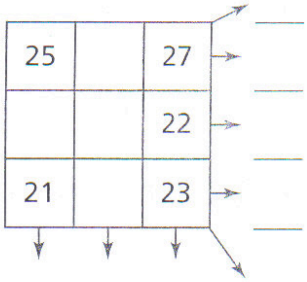
2.



3.



4.



Test Prep

5. What number makes this sentence true?

$$24 \times \square = 24$$

A. 10 C. 1

B. 4 D. 0

6. Ella makes 9 goody bags for her party. She wants to put 5 stickers in each bag. How many stickers does she need?

A. 4 C. 40

B. 14 D. 45

ROUNDING NUMBERS

Round each number to the nearest hundred.

1. 376 _____
2. 143 _____
3. 255 _____
4. 709 _____
5. 3,246 _____
6. 8,053 _____
7. 28,609 _____
8. 137,039 _____

Round each number to the nearest thousand.

9. 4,751 _____
10. 8,097 _____
11. 25,026 _____
12. 63,501 _____
13. 78,705 _____
14. 218,509 _____
15. 453,698 _____
16. 159,875 _____

Round each number to the nearest ten thousand.

17. 159,609 _____
18. 305,809 _____
19. 235,123 _____
20. 987,610 _____
21. 2,109,859 _____
22. 8,349,153 _____
23. 5,329,193 _____
24. 1,953,683 _____

Round each number to the nearest one.

1. 6.8 _____	2. 5.4 _____	3. 7.50 _____
4. 18.7 _____	5. 9.37 _____	6. 3.59 _____
7. 13.8 _____	8. 15.5 _____	9. 23.9 _____
10. 25.49 _____	11. 86.80 _____	12. 83.49 _____

Round each number to the nearest tenth.

13. 0.84 _____	14. 0.76 _____	15. 0.75 _____
16. 2.39 _____	17. 9.28 _____	18. 16.808 _____

Round each number to the nearest hundredth.

19. 0.572 _____	20. 0.388 _____	21. 0.755 _____
22. 2.839 _____	23. 5.705 _____	24. 13.670 _____

Round each number to the nearest thousandth.

25. 2.8436 _____	26. 5.7916 _____	27. 1.0185 _____
28. 16.3521 _____	29. 25.0051 _____	30. 19.8507 _____

Name _____ Date _____

Unit 2: Decimals—Computation

Multiplying and Dividing Using Powers of Ten

To multiply a decimal by:	Move the decimal point:	Example
$10 = 10^1$ $100 = 10^2$ $1{,}000 = 10^3$	1 place to the right 2 places to the right 3 places to the right	$10 \times 6.23 = 62.3$ $100 \times 6.23 = 623.0$ $1{,}000 \times 6.23 =$ $1{,}000 \times 6.230 = 6{,}230.0$

To divide a decimal by:	Move the decimal point:	Example
$10 = 10^1$ $100 = 10^2$ $1{,}000 = 10^3$	1 place to the left 2 places to the left 3 places to the left	$24.95 \div 10 = 2.495$ $24.95 \div 100 = 0.2495$ $024.95 \div 1{,}000 = 0.02495$

Complete the pattern. Show the movement of the decimal point.

1. $5.7 \times 10 =$ _____
   $5.70 \times 100 =$ _____
   $5.700 \times 1{,}000 =$ _____

2. $24.6 \div 10 =$ _____
   $24.6 \div 100 =$ _____
   $24.6 \div 1{,}000 =$ _____

3. $0.06 \times 10 =$ _____
   $0.06 \times 100 =$ _____
   $0.060 \times 1{,}000 =$ _____

Find the product or quotient.

4. 10×9.26 _____
5. 0.642×100 _____
6. $11.32 \div 10$ _____
7. $2.46 \div 100$ _____
8. 100×3.13 _____
9. $1{,}000 \times 4.6$ _____
10. $127.6 \div 100$ _____
11. 69.7×100 _____
12. $164.5 \div 1{,}000$ _____
13. 100×8.4 _____
14. $84.2 \div 1{,}000$ _____
15. $9.4 \div 100$ _____
16. 10×7.372 _____
17. $536.5 \div 100$ _____
18. 100×0.069 _____
19. $12.4 \div 1{,}000$ _____
20. $1{,}000 \times 0.09$ _____

Name _____ Date _____

Unit 2: Computation

Using Mixed Numbers in Division

Sometimes we must use several steps to divide mixed numbers.

Divide: $3\frac{1}{2} \times 1\frac{3}{8}$.

Step 1 Write the mixed number as a fraction. $3\frac{1}{2} \div 1\frac{3}{8} = \frac{7}{2} \div \frac{11}{8}$

Step 2 Rewrite as a multiplication example. $\frac{7}{2} \div \frac{11}{8} = \frac{7}{2} \times \frac{8}{11}$

Step 3 Multiply. Write a mixed number for the answer. $\frac{7}{2} \times \frac{8}{11} = \frac{56}{22}$

$= 2\frac{12}{22} = 2\frac{6}{11}$

Divide. Write the answers in lowest terms.

1. $1\frac{1}{3} \div \frac{1}{4}$ ____
2. $3\frac{5}{8} \div 2\frac{1}{4}$ ____
3. $2\frac{1}{4} \div \frac{2}{3}$ ____
4. $5\frac{3}{8} \div 1\frac{3}{7}$ ____
5. $3\frac{3}{4} \div 1\frac{1}{9}$ ____
6. $1 \div 4\frac{1}{4}$ ____
7. $5\frac{1}{6} \div 5\frac{2}{3}$ ____
8. $5 \div 2\frac{1}{5}$ ____
9. $8 \div 4\frac{2}{7}$ ____
10. $4\frac{2}{5} \div 4$ ____
11. $8\frac{7}{9} \div 3$ ____
12. $2\frac{2}{3} \div 1\frac{1}{6}$ ____
13. $4\frac{5}{8} \div 3\frac{3}{4}$ ____
14. $3\frac{3}{5} \div 1\frac{3}{10}$ ____
15. $2\frac{3}{4} \div 5\frac{1}{8}$ ____
16. $3\frac{4}{5} \div 1\frac{3}{4}$ ____
17. $6\frac{1}{3} \div 3\frac{1}{5}$ ____
18. $9\frac{3}{5} \div 2$ ____
19. $9 \div 3\frac{1}{3}$ ____
20. $4\frac{3}{8} \div 2$ ____

Name _____ Date _____

Unit 2: Computation

Dividing Fractions

To divide by a fraction, multiply by its reciprocal.

$$\frac{1}{3} \div \frac{4}{5} = \frac{1}{3} \times \frac{5}{4} = \frac{5}{12}$$

Reciprocals

✎ **Divide. Write the answers in lowest terms.**

1. $\frac{2}{3} \div \frac{1}{4}$ ____
2. $\frac{1}{2} \div \frac{3}{4}$ ____
3. $\frac{1}{7} \div \frac{2}{9}$ ____
4. $2 \div \frac{5}{8}$ ____
5. $5 \div \frac{2}{7}$ ____
6. $\frac{1}{6} \div \frac{5}{7}$ ____
7. $\frac{3}{5} \div \frac{1}{3}$ ____
8. $\frac{10}{3} \div \frac{20}{7}$ ____
9. $\frac{1}{2} \div \frac{2}{3}$ ____
10. $\frac{9}{8} \div \frac{1}{9}$ ____
11. $\frac{6}{1} \div \frac{1}{9}$ ____
12. $\frac{5}{8} \div \frac{9}{20}$ ____
13. $\frac{9}{15} \div \frac{7}{30}$ ____
14. $\frac{3}{10} \div \frac{1}{12}$ ____
15. $\frac{1}{10} \div \frac{5}{12}$ ____
16. $\frac{4}{3} \div \frac{4}{5}$ ____
17. $\frac{3}{4} \div \frac{2}{3}$ ____
18. $\frac{5}{8} \div \frac{1}{4}$ ____
19. $\frac{6}{5} \div \frac{3}{10}$ ____
20. $\frac{11}{20} \div \frac{4}{15}$ ____

Name _____ Date _____

Unit 2: Computation

More Multiplying Fractions

Sometimes we must use several steps to multiply fractions.

Multiply: $\frac{7}{9} \times \frac{9}{10}$.

Step 1 Divide the numerator and the denominator by the GCF. $\frac{7}{\cancel{9}_{1}} \times \frac{\cancel{9}^{1}}{10}$

Step 2 Multiply the numerators. $\frac{7}{\cancel{9}_{1}} \times \frac{\cancel{9}^{1}}{10} = \frac{7}{\quad}$

Step 3 Multiply the denominators. $\frac{7}{\cancel{9}_{1}} \times \frac{\cancel{9}^{1}}{10} = \frac{7}{10}$

Multiply. Write the answers in lowest terms.

1. $\frac{7}{8} \times \frac{8}{9}$ ____
2. $\frac{5}{16} \times \frac{7}{15}$ ____
3. $\frac{5}{9} \times \frac{14}{15}$ ____
4. $\frac{7}{8} \times \frac{4}{7}$ ____
5. $\frac{8}{9} \times \frac{9}{8}$ ____
6. $\frac{5}{9} \times \frac{9}{5}$ ____
7. $\frac{5}{8} \times \frac{5}{2}$ ____
8. $\frac{2}{9} \times \frac{5}{8}$ ____
9. $\frac{7}{12} \times \frac{11}{14}$ ____
10. $\frac{1}{4} \times \frac{4}{5}$ ____
11. $\frac{7}{8} \times \frac{4}{5}$ ____
12. $\frac{3}{7} \times \frac{5}{6}$ ____
13. $\frac{9}{10} \times \frac{5}{8}$ ____
14. $\frac{3}{5} \times \frac{9}{4}$ ____
15. $\frac{3}{4} \times \frac{1}{3}$ ____
16. $\frac{11}{15} \times \frac{5}{9}$ ____
17. $\frac{4}{9} \times \frac{9}{4}$ ____
18. $\frac{2}{3} \times \frac{3}{8}$ ____
19. $\frac{9}{10} \times \frac{20}{21}$ ____
20. $\frac{12}{25} \times \frac{5}{18}$ ____

Name _____ Date _____

Unit 2: Computation

Subtraction with Regrouping

Sometimes we must regroup to subtract fractions.

Subtract: $8\frac{1}{5} - 3\frac{4}{5}$.

Step 1

$$8\frac{1}{5} = 7\frac{6}{5}$$
$$-\ 3\frac{4}{5} = 3\frac{4}{5}$$

Step 2

$$8\frac{1}{5} = 7\frac{6}{5}$$
$$-\ 3\frac{4}{5} = 3\frac{4}{5}$$
$$4\frac{2}{5}$$

Subtract. Write the answers in lowest terms.

1. $6\frac{2}{9} - 4\frac{8}{9}$

2. $3\frac{2}{5} - 1\frac{4}{5}$

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

4. $3\frac{2}{7} - 2\frac{5}{7}$

5. $9 - 3\frac{7}{12}$

6. $5 - \frac{7}{8}$

7. $5\frac{3}{7} - 3\frac{6}{7}$

8. $7\frac{5}{10} - 4\frac{7}{10}$

9. $6\frac{1}{4} - 2\frac{3}{4}$

10. $8\frac{3}{11} - 4\frac{7}{11}$

11. $9 - 2\frac{13}{20}$

12. $7\frac{5}{9} - 5\frac{8}{9}$

13. $8\frac{9}{11} - 3\frac{10}{11}$

14. $7\frac{5}{12} - 5\frac{7}{12}$

15. $6\frac{2}{7} - 1\frac{5}{7}$

16. $5\frac{7}{12} - 4\frac{11}{12}$

17. $9\frac{1}{3} - 7\frac{2}{3}$

18. $25\frac{3}{8} - 8\frac{7}{8}$

19. $16 - 6\frac{7}{9}$

20. $10\frac{2}{6} - 5\frac{5}{6}$

Name _____ Date _____

Unit 2: Computation

Subtraction with Unlike Denominators

We can subtract fractions with unlike denominators. **Subtract:** $\frac{2}{3} - \frac{3}{7}$.

Step 1

$$\frac{2}{3} = \frac{14}{21}$$
$$-\ \frac{3}{7} = \frac{9}{21}$$

Step 2

$$\frac{2}{3} = \frac{14}{21}$$
$$-\ \frac{3}{7} = \frac{9}{21}$$
$$\frac{5}{21}$$

Subtract. Write the answers in lowest terms.

1. $\frac{4}{5} - \frac{2}{3}$
2. $\frac{3}{4} - \frac{3}{8}$
3. $\frac{2}{3} - \frac{1}{4}$
4. $\frac{2}{5} - \frac{3}{10}$
5. $\frac{5}{7} - \frac{1}{2}$
6. $\frac{5}{7} - \frac{2}{3}$
7. $\frac{1}{2} - \frac{2}{5}$
8. $\frac{5}{6} - \frac{1}{2}$
9. $\frac{7}{9} - \frac{2}{3}$
10. $\frac{3}{4} - \frac{3}{5}$
11. $\frac{8}{9} - \frac{3}{4}$
12. $\frac{1}{2} - \frac{1}{6}$
13. $\frac{7}{8} - \frac{2}{3}$
14. $\frac{2}{3} - \frac{7}{12}$
15. $\frac{3}{4} - \frac{2}{5}$
16. $\frac{11}{12} - \frac{1}{4}$
17. $\frac{6}{7} - \frac{1}{3}$
18. $\frac{2}{3} - \frac{1}{2}$
19. $\frac{5}{6} - \frac{3}{4}$
20. $\frac{4}{5} - \frac{1}{3}$

Name _____ Date _____

Unit 2: Computation

More Addition of Mixed Numbers

We must often use several steps to add mixed numbers. **Add:** $2\frac{5}{6} + 7\frac{5}{9}$.

Step 1

$$2\frac{5}{6} = 2\frac{15}{18}$$
$$+\ 7\frac{5}{9} = 7\frac{10}{18}$$

Step 2

$$2\frac{5}{6} = 2\frac{15}{18}$$
$$+\ 7\frac{5}{9} = 7\frac{10}{18}$$
$$\frac{25}{18}$$

Step 3

$$2\frac{5}{6} = 2\frac{15}{18}$$
$$+\ 7\frac{5}{9} = 7\frac{10}{18}$$
$$9\frac{25}{18} = 10\frac{7}{18}$$

Add. Write the answers in lowest terms.

1. $9\frac{2}{3} + 5\frac{1}{2}$

2. $2\frac{1}{4} + 5\frac{4}{5}$

3. $4\frac{1}{3} + \frac{3}{4}$

4. $3\frac{5}{6} + 4\frac{3}{4}$

5. $5\frac{5}{9} + 6\frac{7}{12}$

6. $5\frac{1}{2} + 2\frac{7}{10}$

7. $10\frac{1}{4} + 3\frac{5}{6}$

8. $7\frac{3}{5} + 6\frac{3}{4}$

9. $2\frac{2}{3} + 9\frac{5}{6}$

10. $5\frac{4}{9} + 8\frac{3}{4}$

11. $2\frac{1}{3} + 1\frac{3}{4}$

12. $3\frac{1}{2} + 4\frac{4}{5}$

13. $1\frac{7}{12} + 1\frac{5}{6}$

14. $3\frac{1}{4} + 5\frac{4}{5}$

15. $4\frac{5}{6} + 3\frac{3}{4}$

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

17. $2\frac{1}{2} + 1\frac{3}{5}$

18. $6\frac{2}{3} + 1\frac{4}{9}$

19. $\frac{7}{10} + \frac{3}{5}$

20. $2\frac{5}{8} + 5\frac{13}{16}$

Name _____ Date _____

Unit 2: Computation

Addition with Unlike Denominators

We can add fractions with unlike denominators. **Add:** $\frac{1}{3} + \frac{3}{5}$.

Step 1

$$\begin{array}{r} \frac{1}{3} = \frac{5}{15} \\ +\ \frac{3}{5} = \frac{9}{15} \\ \hline \end{array}$$

Step 2

$$\begin{array}{r} \frac{1}{3} = \frac{5}{15} \\ +\ \frac{3}{5} = \frac{9}{15} \\ \hline \frac{14}{15} \end{array}$$

Add. Write the answers in lowest terms.

1. $\frac{2}{3} + \frac{1}{4}$
2. $\frac{2}{9} + \frac{2}{3}$
3. $\frac{1}{2} + \frac{3}{8}$
4. $\frac{1}{5} + \frac{2}{3}$
5. $\frac{2}{6} + \frac{2}{5}$
6. $\frac{1}{5} + \frac{3}{7}$
7. $\frac{2}{3} + \frac{1}{8}$
8. $\frac{2}{5} + \frac{1}{3}$
9. $\frac{4}{9} + \frac{1}{4}$
10. $\frac{1}{9} + \frac{1}{8}$
11. $\frac{2}{5} + \frac{3}{10}$
12. $\frac{2}{6} + \frac{3}{10}$
13. $\frac{1}{2} + \frac{3}{7}$
14. $\frac{2}{5} + \frac{2}{4}$
15. $\frac{1}{4} + \frac{5}{12}$
16. $\frac{3}{8} + \frac{2}{6}$
17. $\frac{4}{15} + \frac{2}{3}$
18. $\frac{2}{3} + \frac{2}{9}$
19. $\frac{1}{3} + \frac{3}{8}$
20. $\frac{2}{7} + \frac{1}{4}$