Name _____ Date _____

1.1 Practice B

Find the value of the expression. Check your answer using estimation.

1. $3143 + 999$

2. $5154 + 2139$

3. $4137 + 3895$

4. $4123 - 2314$

5. $9366 - 8549$

6. $5610 - 3462$

7. 92×17

8. 412×327

9. 644×189

10. $2584 \div 152$

11. $\frac{1540}{44}$

12. $4004 \div 143$

13. $\frac{8167}{219}$

14. $4199 \div 99$

15. $29{,}104 \div 135$

16. You sign up for 13 weeks of swim lessons. The total cost is $325. What is the cost per week?

17. The cafeteria has 75 tables and 912 chairs. What is the total number of tables and chairs?

18. The convention center has 18 pianos. Each piano has 88 piano keys. What is the total number of piano keys?

19. You have 800 square feet of the room reserved for tables.

a. Each round table requires 49 square feet. How many round tables will fit in 800 square feet?

b. Each rectangular table requires 64 square feet. How many rectangular tables will fit in 800 square feet?

c. The round tables seat 8 people. The rectangular tables seat 12 people. Using your answers in (a) and (b), which type of table will seat more people in the allotted 800 square feet, *round* or *rectangular*?

Name _____ Date _____

1.2 Practice B

Write the product as a power.

1. 12×12
2. $4 \cdot 4 \cdot 4$
3. $5 \times 5 \times 5 \times 5$
4. $25 \times 25 \times 25$
5. $30 \times 30 \times 30 \times 30 \times 30$
6. $17 \cdot 17 \cdot 17$

Find the value of the power.

7. 13^2
8. 2^5
9. 8^3

Use a calculator to find the value of the power.

10. 5^6
11. 13^4
12. 3^8

13. Describe and correct the error in writing the value of the product.

$\times \quad 7^5 = 7 \times 5 = 35$

14. The price of a car is 3×10^4. What is the price of the car?

Determine whether the number is a perfect square.

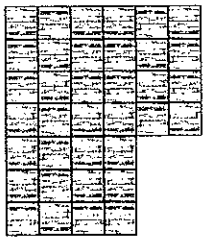
15. 169
16. 625
17. 336

Write the product as a power.

18. $d \cdot d \cdot d \cdot d$
19. $5 \cdot z \cdot z \cdot z$
20. $p \cdot p \cdot p \cdot p \cdot p \cdot p$

21. The number 75 falls between what two perfect squares?

22. A homeowner would like to modify the existing patio to create a square patio, either by adding new tiles or moving existing tiles. Each tile is one foot square. The current patio is shown.



a. What is the area of the existing patio in square feet?

b. How could the homeowner rearrange the tiles to create a square patio without adding new tiles?

c. How many tiles must the homeowner purchase to create a patio that is 49 square feet? Can this be done without moving any of the existing tiles?

d. To create a patio that is 25 square feet, the homeowner must move some tiles and remove others. How many tiles must be moved and how many must be removed?

Name _____ Date _____

1.3 Practice B

Evaluate the expression.

1. $64 \div 4 \times 10$
2. $55 \div (4^2 - 5)$
3. $3 \cdot 7 + 4 \cdot 6^2$
4. $(22 - 4) \div (2 \times 3)$
5. $8^2 - 20 \div 2 \times 5$
6. $13 + (38 - 6^2) \cdot 3$
7. Evaluate each expression. Are the two expressions equal? Explain your answer.

   a. $(100 \div 5) \times 4$

   b. $100 \div 5 \times 4$

Evaluate the expression.

8. $(5 - 3)^4 - 2(7) + 8^2$
9. $27 - 3\frac{\square}{\square}5\frac{1}{2} - \frac{7}{2}\frac{\square}{\square}$
10. $9(6.2 + 5.8) + 28 \div 4$
11. $4^2(4.9 - 2.9) - 24 \div 3$
12. There are 34 people in a restaurant. Four groups of 3 people leave, and then 5 groups of 2 people arrive. Evaluate the expression $34 - 4 \cdot 3 + 5 \cdot 2$ to determine how many people are in the restaurant.

Evaluate the expression.

13. $\dfrac{11^2 - 5 + 4(7)}{(4)(3)}$
14. $\dfrac{54 \div 6 + 31}{4^2 + 4}$
15. A group of 8 students purchase 4 pizzas at \$5 each, 2 orders of breadsticks at \$2 each, and 8 drinks at \$1.50 each. How much does each student owe before tax? Explain how you solved the problem.
16. Five sandwich rings are each cut into 4 pieces. You then cut each of the pieces into 3 servings. How many servings do you have?
17. Copy each statement. Insert $+$, $-$, $\times$, or $\div$ symbols to make each statement true.

    a. $17 \_?\_ 2 \_?\_ 3 \_?\_ 8 = 3$

    b. $33 \_?\_ 3 \_?\_ 2 \_?\_ 5 = 1$

Name _____ Date _____

1.4 Practice B

Use divisibility rules to determine whether the number is divisible by 2, 3, 5, 6, 9, and 10. Use a calculator to check your answers.

1. 1035
2. 1830
3. 2061

List the factor pairs of the number.

4. 23
5. 44
6. 57
7. 32
8. 50
9. 61

10. Describe and correct the error in writing the factor pairs of 30.

✗
$30 = 2 \cdot 15$
$30 = 3 \cdot 10$
$30 = 5 \cdot 6$

Write the prime factorization of the number.

11. 64
12. 40
13. 42
14. 72
15. 85
16. 91

Find the number represented by the prime factorization.

17. $3^2 \cdot 7 \cdot 11$
18. $5^2 \cdot 11^2 \cdot 17$

19. The prime factorization of a number is the product of the first 5 prime numbers. Find the number.

Write the prime factorization of the number.

20. 875
21. 256
22. 594

23. A friend is building a dog pen with an area of 150 square feet. Each side must be at least 5 feet long.
    a. List all possible dimensions of the dog pen.
    b. What is the maximum amount of fence required to build the dog pen? How much fence is required?
    c. What dimensions would provide the longest running path for the dog?

Name _____ Date _____

1.5 Practice B

Find the GCF of the numbers using lists of factors.

1. 15, 40
2. 32, 56
3. 34, 39
4. 21, 84
5. 60, 100
6. 48, 108

Find the GCF of the numbers using prime factorizations.

7. 34, 85
8. 72, 108
9. 80, 200
10. 42, 56
11. 22, 154
12. 90, 150

13. Describe and correct the error in finding the GCF of 10 and 18.

> ✗ $10 = 2 \cdot 5$
> $18 = 2 \cdot 3^2$
> The GCF is 90.

Find the GCF of the numbers.

14. 45, 51, 69
15. 20, 45, 55
16. 24, 84, 108

17. You are creating a set of three numbers that have a GCF of 9. You have 27 and 54 for two of the numbers.
    a. What is the GCF of 27 and 54?
    b. Find two numbers that you could add to the set of 27 and 54 such that the GCF is now 9.

18. Consider the numbers 308, 616, and 660.
    a. Find the prime factorization of each number.
    b. Find the GCF of each pair of numbers.
    c. Which pair of numbers has a different GCF than the other two pairs?

Name _____ Date _____

1.6 Practice B

Find the LCM of the numbers using lists of multiples.

1. 9, 11
2. 6, 21
3. 15, 18
4. 24, 28
5. 12, 20
6. 8, 26

Find the LCM of the numbers using prime factorizations.

7. 14, 22
8. 16, 28
9. 18, 27
10. 12, 34
11. 10, 46
12. 21, 36

13. You run one lap around a mile track every 8 minutes. Your friend runs around the same track every 10 minutes. You both start at the starting line at the same time.

    a. How far have each of you run when you first meet again at the starting line?

    b. How far have each of you run the next time you meet at the starting line?

Find the LCM of the numbers.

14. 3, 7, 13
15. 5, 9, 12
16. 8, 14, 21

17. Plastic plates come in packs of 8, plastic utensils come in packs of 12, and plastic cups come in packs of 20. What are the least numbers of packs you should buy in order to have the same number of plates, utensils, and cups?

Tell whether the statement is always, sometimes, or never true.

18. The GCF of two different numbers is greater than the LCM of the numbers.

19. The LCM of a prime number and a composite number is a multiple of the prime number.

20. A theater gives away one free ticket to every 10th customer and two free tickets to every 25th customer. The manager wants to give away four free tickets when the customer is both a 10th and a 25th customer.

    a. Who is the first customer that will receive four free tickets?

    b. If 120 customers have bought tickets today, how many free tickets has the manager given away?

Name _____ Date _____

Extension 1.6 Practice

Use the LCD to rewrite the fractions with the same denominator.

1. $\frac{3}{4}, \frac{1}{10}$

2. $\frac{2}{3}, \frac{5}{8}$

3. $\frac{5}{14}, \frac{1}{6}$

4. $\frac{1}{3}, \frac{5}{6}, \frac{4}{9}$

Copy and complete the statement using <, >, or =.

5. $\frac{3}{4} \_?\_ \frac{2}{3}$

6. $\frac{5}{12} \_?\_ \frac{4}{15}$

7. $3\frac{5}{18} \_?\_ 3\frac{7}{24}$

8. $\frac{18}{8} \_?\_ 2\frac{1}{4}$

Add or subtract. Write the answer in simplest form.

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

10. $\frac{4}{9} - \frac{1}{4}$

11. $\frac{5}{8} - \frac{3}{14}$

12. $\frac{7}{15} + \frac{3}{10}$

13. $4\frac{1}{8} + 3\frac{3}{4}$

14. $5\frac{7}{12} - 2\frac{2}{9}$

15. $1\frac{1}{3} + \frac{6}{7}$

16. $4\frac{11}{12} - 2\frac{3}{20}$

17. In which of Exercises 9–16 is the LCD the same as the product of the denominators? What characteristic do the denominators in this set of problems have that the other problems do not?