

# Algebra I Syllabus

This is a challenging and fast-paced high school class designed for the student who has mastery of Pre-Algebra. Students will connect previous learning to Algebra as we explore graphing and solving equations. At least five different families of functions will be studied.

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Algebra I at Lee Burneson Middle School is the pathway to the high school honors track. Students who maintain a high grade for the year and display characteristics of an honor student will be recommended for the honors math track in high school (Honors Geometry and Honors Algebra II, leading to AP Calculus).

***A graphing calculator (TI-84 for example) is highly recommended for this class***

## Course Topics

*1<sup>st</sup> Quarter:* Foundations for Algebra, Proportions, Solving Equations and Inequalities

*2<sup>nd</sup> Quarter:* Linear and Absolute Value Functions, Solving Systems of Equations and Inequalities, Bi-Variate Data (scatter plots), and Sequences

## *1<sup>st</sup> Semester Exam*

*3<sup>rd</sup> Quarter:* Exponents, Polynomials, Factoring, Quadratic Functions

*4<sup>th</sup> Quarter:* Exponential and Radical Functions, Rational Expressions and Functions

## *2<sup>nd</sup> Semester Exam*

## Grading Scale

Algebra I is made up of two (1/2 credit each) semesters. Semester grade will be reflected on WHS report card (and begin a high school GPA). A semester grade is calculated using the following weights:

### Semester I

*First Quarter (40%)*

*Second Quarter (40%)*

*Exam (20%)*

### Semester II

*Third Quarter (40%)*

*Fourth Quarter (40%)*

*Exam (20%)*

|    |         |      |
|----|---------|------|
| A+ | 97% up  | 4.33 |
| A  | 93 < 96 | 4    |
| A- | 90 < 92 | 3.67 |
| B+ | 87 < 89 | 3.33 |
| B  | 83 < 86 | 3    |
| B- | 80 < 82 | 2.67 |
| C+ | 77 < 79 | 2.33 |
| C  | 73 < 76 | 2    |
| C- | 70 < 72 | 1.67 |
| D+ | 67 < 69 | 1.33 |
| D  | 63 < 66 | 1    |
| D- | 60 < 62 | 0.67 |
| F  | <60     | 0    |

***Students planning on taking Algebra I at LBMS should be mature students possessing the following attributes:***

***Responsibility, self-motivation, diligence, and inquisitiveness***

*Students should complete this summer readiness packet. This packet includes some brief review of past content. A test may be given the first week of school covering this material.*

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### Adding Fractions

1)  $\frac{1}{10} + \frac{6}{30} =$

2)  $\frac{3}{4} + \frac{9}{10} =$

3)  $\frac{11}{13} + \frac{7}{26} =$

4)  $\frac{6}{27} + \frac{7}{9} =$

5)  $\frac{11}{56} + \frac{2}{4} =$

6)  $\frac{1}{12} + \frac{4}{9} =$

7)  $\frac{12}{24} + \frac{1}{4} =$

8)  $\frac{2}{21} + \frac{4}{7} =$

9)  $\frac{12}{26} + \frac{1}{13} =$

10)  $\frac{4}{8} + \frac{1}{4} =$



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### Subtracting Fractions

1 )  $\frac{8}{15} - \frac{1}{9} =$

2 )  $\frac{2}{3} - \frac{2}{6} =$

3 )  $\frac{4}{7} - \frac{12}{21} =$

4 )  $\frac{2}{3} - \frac{9}{54} =$

5 )  $\frac{16}{29} - \frac{1}{58} =$

6 )  $\frac{4}{10} - \frac{8}{25} =$

7 )  $\frac{2}{4} - \frac{1}{3} =$

8 )  $\frac{11}{23} - \frac{9}{46} =$

9 )  $\frac{13}{23} - \frac{4}{46} =$

10 )  $\frac{6}{23} - \frac{9}{46} =$



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### Multiplying Fractions

1 )  $\frac{4}{9} \times \frac{5}{15} =$

2 )  $\frac{1}{2} \times \frac{4}{6} =$

3 )  $\frac{6}{18} \times \frac{2}{5} =$

4 )  $\frac{1}{2} \times \frac{1}{9} =$

5 )  $\frac{1}{2} \times \frac{7}{8} =$

6 )  $\frac{1}{8} \times \frac{14}{15} =$

7 )  $\frac{4}{9} \times \frac{4}{14} =$

8 )  $\frac{6}{20} \times \frac{2}{3} =$

9 )  $\frac{6}{20} \times \frac{3}{7} =$

10 )  $\frac{12}{14} \times \frac{7}{9} =$



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### Dividing Fractions

1)  $\frac{2}{6} \div \frac{7}{20} =$

2)  $\frac{17}{18} \div \frac{1}{2} =$

3)  $\frac{1}{5} \div \frac{7}{10} =$

4)  $\frac{6}{10} \div \frac{3}{4} =$

5)  $\frac{1}{3} \div \frac{1}{16} =$

6)  $\frac{3}{5} \div \frac{2}{10} =$

7)  $\frac{14}{20} \div \frac{3}{5} =$

8)  $\frac{12}{18} \div \frac{6}{15} =$

9)  $\frac{2}{6} \div \frac{3}{5} =$

10)  $\frac{5}{14} \div \frac{5}{15} =$



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1 )  $(+28) \div (+4) =$

2 )  $(+36) \div (+4) =$

3 )  $(-2) \times (+2) =$

4 )  $(+6) - (-9) =$

5 )  $(+4) - (+7) =$

6 )  $(+2) + (-5) =$

7 )  $(+6) - (+9) =$

8 )  $(+7) \times (-9) =$

9 )  $(+3) - (+2) =$

10 )  $(+7) + (-6) =$

11 )  $(+20) \div (+5) =$

12 )  $(+8) - (-7) =$

13 )  $(-18) \div (-3) =$

14 )  $(-6) + (-4) =$

15 )  $(+9) + (+3) =$

16 )  $(+2) \times (-6) =$

17 )  $(+9) - (-3) =$

18 )  $(+2) \times (+6) =$

19 )  $(+3) \times (+7) =$

20 )  $(-18) \div (-9) =$

21 )  $(-9) + (+4) =$

22 )  $(+5) \times (-4) =$

23 )  $(+8) + (+4) =$

24 )  $(-48) \div (-8) =$

25 )  $(-8) + (-8) =$

26 )  $(+4) \div (+2) =$

27 )  $(-9) \times (+7) =$

28 )  $(-4) - (+2) =$

29 )  $(-56) \div (+7) =$

30 )  $(+5) \times (+6) =$



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### Solve the Exponents

1 )  $(10)^2 =$  \_\_\_\_\_

11 )  $(-12)^2 =$  \_\_\_\_\_

2 )  $(9)^3 =$  \_\_\_\_\_

12 )  $(6)^2 =$  \_\_\_\_\_

3 )  $(-2)^7 =$  \_\_\_\_\_

13 )  $(8)^3 =$  \_\_\_\_\_

4 )  $(-8)^3 =$  \_\_\_\_\_

14 )  $(4)^4 =$  \_\_\_\_\_

5 )  $(7)^3 =$  \_\_\_\_\_

15 )  $(-3)^3 =$  \_\_\_\_\_

6 )  $(-6)^3 =$  \_\_\_\_\_

16 )  $(3)^3 =$  \_\_\_\_\_

7 )  $(-3)^4 =$  \_\_\_\_\_

17 )  $(-9)^2 =$  \_\_\_\_\_

8 )  $(-7)^3 =$  \_\_\_\_\_

18 )  $(2)^8 =$  \_\_\_\_\_

9 )  $(-4)^4 =$  \_\_\_\_\_

19 )  $(12)^2 =$  \_\_\_\_\_

10 )  $(-5)^3 =$  \_\_\_\_\_

20 )  $(-2)^4 =$  \_\_\_\_\_



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## Scientific Notation

Write each number in standard format.

- 1 )  $1.517 \times 10^7$  = \_\_\_\_\_
- 2 )  $8.292 \times 10^2$  = \_\_\_\_\_
- 3 )  $7.556 \times 10^6$  = \_\_\_\_\_
- 4 )  $7.2595 \times 10^3$  = \_\_\_\_\_
- 5 )  $5.523 \times 10^2$  = \_\_\_\_\_
- 6 )  $1.8 \times 10^3$  = \_\_\_\_\_
- 7 )  $3.518 \times 10^8$  = \_\_\_\_\_
- 8 )  $8.0949 \times 10^4$  = \_\_\_\_\_
- 9 )  $8.01 \times 10^4$  = \_\_\_\_\_
- 10 )  $6.815 \times 10^5$  = \_\_\_\_\_

Write each number in scientific notation.

- 11 ) 199000 = \_\_\_\_\_
- 12 ) 97900 = \_\_\_\_\_
- 13 ) 32.431 = \_\_\_\_\_
- 14 ) 283790000 = \_\_\_\_\_
- 15 ) 2120000000 = \_\_\_\_\_
- 16 ) 30.919 = \_\_\_\_\_
- 17 ) 52235000 = \_\_\_\_\_
- 18 ) 3281000 = \_\_\_\_\_
- 19 ) 1797000000 = \_\_\_\_\_
- 20 ) 876000 = \_\_\_\_\_





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### Order of Operations

1 )  $((12 + 5) + (14 \div 7)^2) + 2^2$

6 )  $10 + (6 + (11 - 4)^2) - 4$

2 )  $(14 \div 2)^2 + ((13 + 2) \times 3^2)$

7 )  $(7^2 + (10 \div 5 + 2^2)) + 3^2$

3 )  $((4 + 2)^2 + 6) + 11 - 3^2$

8 )  $(12 \div 6)^2 + ((18 + 2) \times 4^2)$

4 )  $((11 - 5)^2 + 7) - 3 + 5^2$

9 )  $((15 + 2) - (18 \div 6)^2) \times 4^2$

5 )  $12 + (6 \times (10 - 2)^2) + 9$

10 )  $(7^2 + (24 \div 4 + 2^2)) - 5^2$



**LESSON**  
**2-6**

**Practice A**  
**Rates, Ratios, and Proportions**

1. The ratio of boys to girls in an art class is 3:5.  
There are 12 boys in the class. How many girls  
are in the class? \_\_\_\_\_

**Find each unit rate.**

2. An ostrich can run 174 feet in 3 seconds. \_\_\_\_\_
3. It costs \$6.30 to mail a 6-pound package. \_\_\_\_\_
4. Eric read 150 pages in one hour.  
What is Eric's reading rate in pages per minute? \_\_\_\_\_

**Solve each proportion.**

5.  $\frac{y}{8} = \frac{2}{4}$   
\_\_\_\_\_

6.  $\frac{1}{3} = \frac{6}{x}$   
\_\_\_\_\_

7.  $\frac{10}{m} = \frac{25}{5}$   
\_\_\_\_\_

8.  $\frac{3}{4} = \frac{t}{100}$   
\_\_\_\_\_

9.  $\frac{2}{100} = \frac{b}{-200}$   
\_\_\_\_\_

10.  $\frac{x+1}{6} = \frac{1}{3}$   
\_\_\_\_\_

11. Ron has a model car. The scale of the model to the  
actual car is 1:10. The length of the model car is 15 inches.  
How long is the actual car? \_\_\_\_\_
12. On a map, the distance between Jacksonville, FL and  
Tallahassee, FL is about 8 inches. According to the scale,  
1 inch represents 20 miles. About how far apart are the  
two cities? \_\_\_\_\_

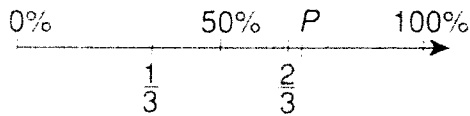
**CHAPTER**  
**6**

**Quiz**

**Section A: Lessons 6-1 through 6-4**

Choose the best answer.

1. What is the percent of the unknown value  $p$  represented on the number line below?



- A 25%                      C 66%  
 B 60%                      D 70%
2. What is 40% written as a fraction?
- F  $\frac{1}{25}$                       H  $\frac{3}{8}$   
 G  $\frac{2}{5}$                       J  $\frac{3}{5}$
3. What is  $\frac{5}{8}$  written as a decimal?
- A 0.375                      C 0.58  
 B 0.5                      D 0.625
4. Estimate 19% of 25.
- F about 3                      H about 5  
 G about 4                      J about 6

5. 80 is about what percent of 228?
- A 33%                      C 66%  
 B 50%                      D 80%
6. 54 is what percent of 150?
- F 36%                      H 50%  
 G 42%                      J 54%
7. Find 5% of 356.
- A 17.8                      C 35.6  
 B 20                      D 71.2
8. 33 is 220% of what number?
- F 15                      H 72.6  
 G 22                      J 100
9. The approximate length of the Nile river is 6693 km. The Amazon river is approximately 96% as long as the Nile. To the nearest kilometer, what is the length of the Amazon?
- A 6021 km                      C 6425 km  
 B 6256 km                      D 6693 km

Name : \_\_\_\_\_

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### Probability Using a Spinner

1 ) What is the probability of the spinner not landing on A or C ? \_\_\_\_\_

2 ) What is the probability of the spinner landing on B or E ? \_\_\_\_\_

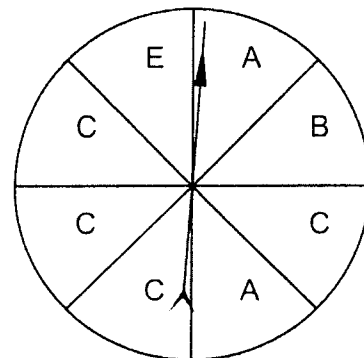
3 ) What is the probability of the spinner landing on C or E ? \_\_\_\_\_

4 ) What is the probability of the spinner not landing on E ? \_\_\_\_\_

5 ) Do you have an equal chance of landing on either A or C ? \_\_\_\_\_

6 ) Do you have an equal chance of landing on either B or E ? \_\_\_\_\_

7 ) What is the probability of the spinner not landing on C ? \_\_\_\_\_



8 ) What is the probability of the spinner landing on 4 ? \_\_\_\_\_

9 ) What is the probability of the spinner not landing on 2 or 4 ? \_\_\_\_\_

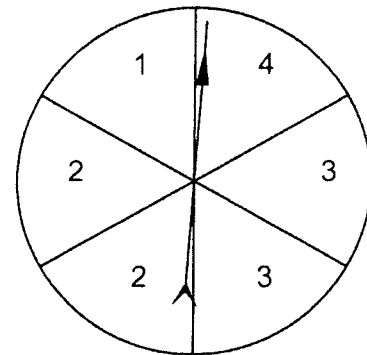
10 ) What is the probability of the spinner not landing on 1 ? \_\_\_\_\_

11 ) What is the probability of the spinner landing on 2 or 3 ? \_\_\_\_\_

12 ) What is the probability of the spinner not landing on 2 or 3 ? \_\_\_\_\_

13 ) What is the probability of the spinner landing on 3 ? \_\_\_\_\_

14 ) Do you have an equal chance of landing on either 1 or 4 ? \_\_\_\_\_



Name : \_\_\_\_\_

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Date : \_\_\_\_\_

### Mean, Mode, Median, and Range

1) 19, 19, 10, 18, 15, 11, 13

Mean \_\_\_\_ Median \_\_\_\_ Mode \_\_\_\_\_ Range \_\_\_\_

6) 8, 9, 15, 18, 10, 10, 14

Mean \_\_\_\_ Median \_\_\_\_ Mode \_\_\_\_\_ Range \_\_\_\_

2) 11, 8, 14, 10, 13, 15, 13

Mean \_\_\_\_ Median \_\_\_\_ Mode \_\_\_\_\_ Range \_\_\_\_

7) 13, 13, 6, 11, 7, 9, 11

Mean \_\_\_\_ Median \_\_\_\_ Mode \_\_\_\_\_ Range \_\_\_\_

3) 15, 17, 17, 11, 8, 8, 15

Mean \_\_\_\_ Median \_\_\_\_ Mode \_\_\_\_\_ Range \_\_\_\_

8) 7, 14, 13, 9, 8, 8, 11, 10

Mean \_\_\_\_ Median \_\_\_\_ Mode \_\_\_\_\_ Range \_\_\_\_

4) 8, 16, 20, 20, 15, 9, 16, 8

Mean \_\_\_\_ Median \_\_\_\_ Mode \_\_\_\_\_ Range \_\_\_\_

9) 19, 17, 16, 19, 19

Mean \_\_\_\_ Median \_\_\_\_ Mode \_\_\_\_\_ Range \_\_\_\_

5) 6, 10, 7, 12, 6, 9, 13

Mean \_\_\_\_ Median \_\_\_\_ Mode \_\_\_\_\_ Range \_\_\_\_

10) 10, 13, 12, 16, 19

Mean \_\_\_\_ Median \_\_\_\_ Mode \_\_\_\_\_ Range \_\_\_\_



**A. Simplify each expression.**

1)  $-3g + 4 - 5g + 8$

2)  $6m + 5n - 7n + m$

3)  $22f + 4g - 5e - 2f$

4)  $-7r^2 + 3r - 2r^2$

5)  $-3p \cdot 5$

6)  $4c^2 - 2c + c^2 - 8c$

7)  $(-5m)(2m)$

8)  $-6(2d - e + 5)$

9)  $4(8v - 1)$

10)  $5h(4 - 2h)$

11)  $-11(5 - 6x)$

12)  $-9(a + 2b - 3c)$

13)  $5(3e + 2f) - 4(e + 7f)$

14)  $13 - 3(2x - 4)$

**B. Evaluate the expression if  $x = 5$  and  $y = -10$**

15)  $3x - 2y$

16)  $-xy^2$

17)  $-4(2y + x)$

**A. Solve each equation.**

1)  $x - 5 = -12$

2)  $r + \frac{5}{8} = \frac{1}{4}$

3)  $-7f = -35$

4)  $15.4 + m = -9.8$

5)  $-\frac{b}{11} = 4$

6)  $12 - h = -14$

7)  $-5 + k = 14$

8)  $-20 = -5m$

9)  $-20 = -\frac{v}{4}$

10)  $18 = 10 - r$

11)  $0.8n = -12$

12)  $-29 = -11 + g$

**B. Graph each inequality.**

13)  $c > -2$

14)  $x \geq 4$

15)  $r \leq 1$

16)  $y < -7$



**C. Solve each inequality.**

17)  $g + 22 > 25$

18)  $5h < 80$

19)  $\frac{a}{3} \leq 2$

20)  $d - 12 \leq 11$

21)  $-1.2 + r > -4.8$

22)  $3y > -21$

**CHAPTER**  
**1****Quiz****Section A: Lesson 1-1 through Lesson 1-7****Choose the best answer.**

- Evaluate  $2x - 8$  for  $x = 5$ .  
A 10                      C 28  
B 18                      D 32
- Evaluate  $4a + 7c$  for  $a = 5$  and  $c = 3$ .  
F 19                      H 41  
G 30                      J 118
- Which algebraic expression represents "4 times the sum of 12 and  $b$ "?  
A  $4 + 12 + b$               C  $4(12 + b)$   
B  $4 + (12 + b)$               D  $4(12 - b)$
- Which algebraic expression represents "3 less than the sum of 5 and  $r$ "?  
F  $(5 \cdot r) - 3$               H  $(5 + r) - 3$   
G  $3 - (5 + r)$               J  $(5 - r) - 3$
- Place these numbers in order from least to greatest:  $-2, 4, -8, 5$   
A  $-2, -8, 4, 5$               C  $-2, 4, 5, -8$   
B  $-8, -2, 4, 5$               D  $4, 5, -2, -8$

**Add.**

- $6 + (-9)$   
F  $-15$                       H 3  
G  $-3$                       J 15

- Evaluate the expression  $11 + d + (-4)$  for  $d = -6$ .

|        |     |
|--------|-----|
| A $-9$ | C 1 |
| B $-1$ | D 9 |

**Subtract.**

- $-12 - (-4)$

|         |      |
|---------|------|
| F $-16$ | H 8  |
| G $-8$  | J 16 |

- $-5 - (-12)$

|         |     |
|---------|-----|
| A $-17$ | C 2 |
| B $-7$  | D 7 |

**Multiply or divide.**

- $-7(-2)$

|         |      |
|---------|------|
| F $-14$ | H 5  |
| G $-5$  | J 14 |

- $\frac{-9(11)}{-3}$

|         |      |
|---------|------|
| A $-33$ | C 33 |
| B 27    | D 99 |



**CHAPTER**  
**1**

**Quiz**

**Section B: Lesson 1-8 through Lesson 1-10**

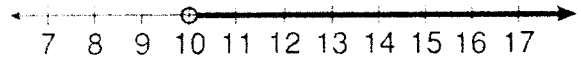
Choose the best answer.

1. Which value of  $z$  is the solution for the equation  $43 - z = 18$ ?  
 A  $z = 13$                       C  $z = 25$   
 B  $z = 15$                       D  $z = 61$
2. Which value of  $t$  is the solution for the equation  $49 = t + 16$ ?  
 F 27                                  H 55  
 G 33                                  J 65
3. Solve  $-17 + v = 3$ .  
 A  $v = -14$                       C  $v = 14$   
 B  $v = 3$                           D  $v = 20$
4. What is the value of  $k$  for this equation:  $\frac{k}{8} = 12$ ?  
 F  $k = \frac{3}{2}$                           H  $k = 66$   
 G  $k = 20$                           J  $k = 96$
5. What is the value of  $m$  for this equation:  $4m - 15 = 33$ ?  
 A  $m = 12$                       C  $m = 52$   
 B  $m = 48$                       D  $m = 60$

6. Solve  $\frac{h}{6} = -7$ .

- F  $h = -42$                       H  $h = 13$   
 G  $h = -13$                       J  $h = 42$

7. Which inequality is represented by this graph?



- A  $x + 3 > 10$                       C  $y + 5 > 15$   
 B  $t - 3 \leq 22$                       D  $5 > \frac{w}{2}$

8. Solve  $\frac{k}{5} < -2$ .

- F  $k < -10$                       H  $k < 7$   
 G  $k < -7$                           J  $k < 10$

9. Solve  $3.7 + y > 4.9$ .

- F  $y < -1.2$                       H  $y < 1.2$   
 G  $y > -1.2$                       J  $y > 1.2$

**CHAPTER**  
**3**

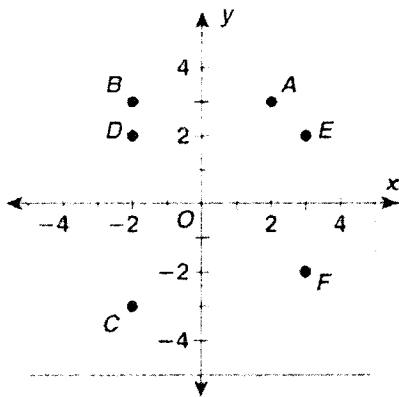
**Quiz**

**Section A: Lesson 3-1 through 3-3**

Choose the best answer.

- Which ordered pair is a solution for  $y = 2x + 8$ ?  
 A (1, 20)                      C (3, 15)  
 B (4, 12)                      D (4, 16)
- Which ordered pair is a solution for  $y = 5x - 3$ ?  
 F (17, 4)                      H (4, 17)  
 G (5, 28)                      J (3, 18)

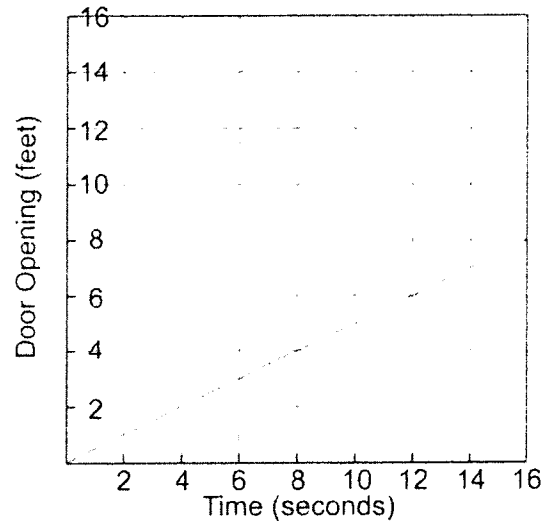
Use this coordinate plane for questions 3–5.



- Which point has coordinates (3, -2)?  
 A point C                      C point E  
 B point D                      D point F

- Identify the coordinates for point B.  
 F (-2, -3)                      H (-2, 3)  
 G (2, 3)                          J (2, -3)
- Identify the coordinates for point A.  
 A (3, 3)                          C (2, 2)  
 B (2, 3)                          D (-2, -3)

The graph shows how many seconds it takes for a garage door to open.



- How many seconds does it take for the garage door to be half-way up?  
 F 4 seconds                      H 6 seconds  
 G 8 seconds                      J 16 seconds

Solve the problems below using your knowledge of perimeter and area concepts.

1. A piece of cardboard has a length of 13 in and a width of 5 in. What is the perimeter?
2. A triangular-shaped rug has a base of 9 feet and a height of 6 feet. What is the area?
3. A parallelogram has a base of 12 meters and a height of 7 meters. What is the area?
4. Find the perimeter of an octagon with a side length of 14 cm.
5. The perimeter of a square is 188 cm. What is the length of each side?
6. A rectangular garden has a length of 15 meters, and a width of 12 meters. What is the area?
7. A trapezoid has bases of 8 cm and 7 cm, and a height of 2 cm. What is the area?
8. A rectangular back yard has a width of 16 feet and an area of 320 square feet. What is the length?
9. A square garden has a side of 5 meters. How much fence is needed to enclose the garden?
10. A square has an area of 196 square centimeters. What is the perimeter?

## LBMS Algebra I Summer Readiness Packet Answers

### Adding Fractions

1)  $\frac{3}{10}$       2)  $\frac{33}{20}$       3)  $\frac{29}{26}$       4) 1      5)  $\frac{39}{56}$

6)  $\frac{19}{36}$       7)  $\frac{3}{4}$       8)  $\frac{2}{3}$       9)  $\frac{7}{13}$       10)  $\frac{3}{8}$

### Subtracting Fractions

1)  $\frac{19}{45}$       2)  $\frac{1}{3}$       3) 0      4)  $\frac{1}{2}$       5)  $\frac{31}{58}$

6)  $\frac{12}{25}$       7)  $\frac{1}{6}$       8)  $\frac{13}{46}$       9)  $\frac{11}{23}$       10)  $\frac{3}{46}$

### Multiplying Fractions

1)  $\frac{4}{27}$       2)  $\frac{1}{3}$       3)  $\frac{2}{15}$       4)  $\frac{1}{18}$       5)  $\frac{7}{16}$

6)  $\frac{7}{60}$       7)  $\frac{8}{63}$       8)  $\frac{1}{5}$       9)  $\frac{9}{70}$       10)  $\frac{2}{3}$

### Dividing Fractions

1)  $\frac{20}{21}$       2)  $\frac{17}{9}$       3)  $\frac{2}{35}$       4)  $\frac{4}{5}$       5)  $\frac{16}{3}$

6) 3      7)  $\frac{7}{6}$       8)  $\frac{5}{3}$       9)  $\frac{5}{9}$       10)  $\frac{15}{14}$

### Operations with Integers

1) 7    2) 9    3) -4    4) 15    5) -3    6) -3    7) -3    8) -63    9) 1      10) 1

11) 4    12) 1    13) 6    14) -10    15) 12    16) -12    17) 12    18) 12    19) 21    20) 2

21) -5    22) -20    23) 12    24) 6    25) -16    26) 2    27) -63    28) -6    29) -8    30) 30

**Solve Exponents**

1) 100 2) 729 3) -128 4) -512 5) 343 6) -216 7) 81 8) -343 9) 256 10) -125

11) 144 12) 36 13) 512 14) 256 15) -27 16) 27 17) 81 18) 256 19) 144 20) 16

**Scientific Notation**

1) 15,170,000 2) 829.2 3) 7,556,000 4) 7,259.5 5) 552.3

6) 1,800 7) 351,800,000 8) 80,949 9) 80,100 10) 681,500

11)  $1.99 \times 10^5$  12)  $1.99 \times 10^5$  13)  $1.99 \times 10^5$  14)  $2.8379 \times 10^9$  15)  $2.12 \times 10^9$

16)  $3.0919 \times 10^1$  17)  $5.2235 \times 10^7$  18)  $3.281 \times 10^6$  19)  $1.797 \times 10^9$  20)  $8.76 \times 10^5$

**Order of Operations**

1) 25 2) 184 3) 44 4) 65 5) 405

6) 61 7) 64 8) 324 9) 128 10) 34

**Rates, Ratios, and Proportions**

1) 20 girls 2) 58 ft/sec 3) \$1.05/lb 4) 2.5 pg/min 5)  $y = 4$  6)  $x = 18$

7)  $m = 2$  8)  $t = 75$  9)  $b = -4$  10)  $x = 1$  11) 150 in 12) 160 miles

**Quiz on Percent**

1) D 2) G 3) D 4) H 5) A 6) F 7) A 8) F 9) C

**Probability**

1)  $\frac{1}{4}$  2)  $\frac{1}{4}$  3)  $\frac{5}{8}$  4)  $\frac{7}{8}$  5) No 6) Yes 7)  $\frac{1}{2}$

8)  $\frac{1}{6}$  9)  $\frac{1}{2}$  10)  $\frac{5}{6}$  11)  $\frac{2}{3}$  12)  $\frac{1}{3}$  13)  $\frac{1}{3}$  14) Yes

**Mean, Mode, Median, Range**

| Problem # | Mean | Mode      | Median | Range |
|-----------|------|-----------|--------|-------|
| 1         | 15   | 19        | 15     | 9     |
| 2         | 12   | 13        | 13     | 7     |
| 3         | 13   | 8, 15, 17 | 15     | 9     |
| 4         | 14   | 8, 16, 20 | 15.5   | 12    |
| 5         | 9    | 6         | 9      | 7     |
| 6         | 12   | 10        | 14     | 10    |
| 7         | 10   | 11, 13    | 11     | 7     |
| 8         | 10   | 8         | 9.5    | 7     |
| 9         | 18   | 19        | 19     | 3     |
| 10        | 14   | none      | 13     | 9     |

**Simplifying**

- 1)  $-8g + 12$     2)  $7m - 2n$     3)  $-5e + 20f + 4g$     4)  $-9r^2 + 3r$     5)  $-15p$   
6)  $5c^2 - 10c$     7)  $-10m^2$     8)  $-12d + 6e - 30$     9)  $32v - 4$     10)  $-10h^2 + 20h$   
11)  $-55 + 66x$     12)  $-9a - 18b + 27c$     13)  $11e - 18f$     14)  $-6x + 25$     15) 35    16) -500    17) 60

**Solving**

- 1)  $x = -7$     2)  $r = -\frac{3}{8}$     3)  $f = 5$     4)  $m = -25.2$     5)  $b = -44$     6)  $h = 26$   
7)  $k = 19$     8)  $m = 4$     9)  $v = 80$     10)  $r = -8$     11)  $n = 15$     12)  $g = -18$   
13) open circle; shaded right of -2    14) closed circle; shaded right of 4  
15) closed circle; shaded left of 1    16) open circle; shaded left of -7  
17)  $g > 3$     18)  $h < 16$     19)  $a \leq 6$     20)  $d \leq 23$     21)  $r > -3.6$     22)  $y > -7$

**Quiz: Section A: Lesson 1-1 through Lesson 1-7**

- 1) B    2) H    3) C    4) H    5) B    6) G    7) C    8) G    9) D    10) J    11) C

**Quiz: Section B: Lesson 1-8 through Lesson 1-10**

- 1) C    2) G    3) D    4) J    5) A    6) F    7) C    8) F    9) J

**Quiz: Section A: Lesson 3-1 through Lesson 3-3**

- 1) D    2) H    3) D    4) H    5) B    6) G

**Perimeter and Area**

- 1) 39 inches    2)  $27ft^2$     3)  $84m^2$     4) 112 cm    5) 47 cm  
6)  $180m^2$     7)  $15cm^2$     8) 20 ft    9) 20 meters    10) 56 cm