

Summer Review Assignments for Algebra I (select 8th Graders and 9th graders)

Dear Parents and Students:

Your teachers for next year are already making plans for our new school year, and we are all looking forward to seeing you in August.

These summer assignments are designed to be a review of the math skills expected of a student at Lanier Christian Academy entering the Algebra I course. These math skills are very important to the success of your child this year. The summer review work will prepare students for the assessment, and allow teachers more instructional time and the ability to progress into new material sooner.

- **Print the assignment.**
- **Summer work is to be turned in on the first Monday of the first school week.**
- **Students must show their work and put a box around the answer.**
- **Parents, check the answers and mark incorrect answers with a colored pen, pencil, or marker. The answers are included.** Write the grade in the UPPER RIGHT corner (number correct divided by number of assigned problems times 100). **Also, please sign your name to indicate that the work was checked by you.** If your student misses 20% or more of the problems, your student needs to correct the missed problems to the right of the original work or on a separate piece of notebook paper. Staple all pages together. **Your student should make corrections until the grade is AT LEAST an 80.**

*****Points will be deducted if students do not show all their work & corrections, if parents do not grade and sign the work, and if the work turned in is below 80% correct.**

Thanks for working on this review and have a wonderful summer!

Order of Operations Worksheet

Complete the problems below using your knowledge of the order of operations. (Note that the "dot" means to multiply.)

1. $4^2 - (2 \cdot 3^3 \cdot 1) \div 2$

2. $(6 \cdot 2) + 2$

3. $[(-2)^2 - 6 \cdot 7]$

4. $9^2 + [(-1)^3 + 3] \cdot 9$

5. $3 \div 1 \cdot 2^3 - 5$

6. $2 \cdot 2 \cdot 2 - 2$

7. $(-2)^3 + (2 - 1 - 1)$

8. $2 + 5(2 \cdot 5 - 3)$

9. $5 - 2(7 \cdot 2 - 6)$

10. $-3 \cdot 4 - 5 \cdot 6$

11. $\frac{3 \cdot 2 - 6}{7 - 5}$

12. $\frac{2^3 - 2^2}{2^2 - 2}$

Multiplying & Reducing Fractions

Multiply and reduce each product if necessary. (Note that the "dot" means to multiply.)

1. $\frac{10}{12} \cdot \frac{4}{10}$

2. $\frac{12}{13} \cdot \frac{1}{4}$

3. $\frac{6}{10} \cdot \frac{5}{12}$

4. $\frac{3}{6} \cdot \frac{1}{2}$

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

6. $3 \cdot \frac{10}{12}$

7. $\frac{14}{15} \cdot 5$

8. $1\frac{3}{7} \cdot \frac{2}{6}$

9. $1\frac{1}{5} \cdot \frac{4}{5}$

10. $2\frac{5}{6} \cdot \frac{1}{6}$

11. $\frac{1}{2} \cdot 4\frac{5}{7}$

12. $2\frac{2}{3} \cdot 9\frac{2}{3}$

13. $5\frac{2}{3} \cdot 1\frac{4}{7}$

14. $2\frac{1}{6} \cdot 5\frac{1}{4}$

Dividing & Reducing Fractions

Divide and reduce the answer if necessary.

1. $\frac{1}{6} \div \frac{9}{12}$

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

3. $\frac{2}{7} \div \frac{2}{5}$

4. $\frac{8}{9} \div \frac{3}{10}$

5. $3\frac{1}{6} \div \frac{5}{6}$

6. $\frac{4}{9} \div 2\frac{1}{2}$

7. $1\frac{1}{2} \div \frac{5}{8}$

8. $\frac{1}{2} \div 5$

9. $8 \div \frac{2}{5}$

10. $\frac{4}{9} \div 6$

11. $1\frac{5}{6} \div 2\frac{3}{7}$

12. $3\frac{1}{5} \div 1\frac{2}{3}$

Solving Equations I

Solve each equation.

1. $6 = 2x$

2. $-7a = -14$

3. $7y = 0$

4. $3n = -186$

5. $3b + 2b = -10$

6. $35 = x + 6x$

7. $3a - 4a = 4$

8. $8x - 2x = 30$

9. $9x - 12x = -15$

10. $5 = 2p - 7$

11. $-8 = 3y + 2$

12. $-5x = 3x$

13. $5 = 2 - 3x$

14. $6 - 2x = -10$

15. $2y + 5 = 5y + 2$

16. $3x - 4 = 2x - 24$

17. $8 - 2y = 1 + y$

18. $12 - 2a = 4 + a$

Solving Inequalities

Solve each inequality below.

1. $x+18 \geq 3$

2. $x-4 < -12$

3. $3x+9 \leq -6$

4. $-2+2x < 6$

5. $11+x \geq 1$

6. $2x-5 < -3$

7. $5 > x-4$

8. $10 \leq x+2$

8. $5x+1 > 2x+16$

10. $7a-9 > 6a+11$

11. $3x-5 \leq 4x+8$

Comparing and Ordering Numbers

Order the numbers from least to greatest.

1. 3, -5, -2.4, 1

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

3. -13, -100, -2, -0.1, -45

4. -0.01, 0.1, 0, -0.1

5. $\frac{9}{10}, \frac{4}{5}, \frac{2}{3}, \frac{1}{2}$

Complete The Following Table

	FRACTION Simplify Completely	DECIMAL	PERCENT
1	$\frac{16}{100}$		
2	$\frac{3}{5}$		
3	$\frac{7}{8}$		
4	$\frac{5}{6}$		
5	$2\frac{1}{4}$		
6		0.45	
7		0.002	
8		1.75	
9		0.075	
10		1.0025	
11			70%
12			7.25%
13			110%
14			$2\frac{1}{4}\%$
15			$\frac{1}{2}\%$

Addition, Subtraction, Multiplication & Division of Signed Numbers I

1) $-3(8) =$

2) $5 - 21 =$

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

4) $-5 - 21 =$

5) $1(-1)(1)(-1)(-1) =$

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

7) $18 / (-3) =$

8) $\frac{-10}{-12} =$

9) $7 - (8) =$

10) $7(-8) =$

11) $5 - 4 - 3 - 2 - 1 =$

12) $-6(-1) =$

13) $(-2) / (-8) =$

14) $-10 - 10 =$

15) $(8) - 3 =$

16) $-8 - 2 =$

17) $4(-2)(-3) =$

18) $4 + (-3) - 6 =$

19) $-8 - 6 =$

20) $(-1)(-2)(-3)(-4) =$

21) $3 - 7 =$

22) $3 + (-12) =$

23) $-1 - 1 - 1 - 1 =$

24) $1 + (-4) - (-3) - 2 =$

25) $1 + 4(2) =$

26) $\frac{8}{-4} =$

27) $4 - (-5) - 3 =$

28) $1(-2)3(-4) =$

Order of Operations Worksheet

Answer
Key

Complete the problems below using your knowledge of the order of operations. (Note that the "dot" means to multiply.)

1. $4^2 - (2 \cdot 3^3 \cdot 1) \div 2$

$16 - 54 \div 2$

$16 - 27 = (-11)$

2. $(6 \cdot 2) + 2$

$12 + 2 = (14)$

3. $[(-2)^2 - 6 \cdot 7]$

$4 - 42 = (-38)$

4. $9^2 + [(-1)^3 + 3] \cdot 9$

$81 + [-1 + 3] \cdot 9$

$81 + [2] \cdot 9$

$81 + 18 = (99)$

5. $3 \div 1 \cdot 2^3 - 5$

$3 \div 1 \cdot 8 - 5$

$3 \cdot 8 - 5$

$24 - 5 = (19)$

6. $2 \cdot 2 \cdot 2 - 2$

$8 - 2 = (6)$

7. $(-2)^3 + (2 - 1 - 1)$

$-8 + 0 = (-8)$

8. $2 + 5(2 \cdot 5 - 3)$

$2 + 5(10 - 3)$

$2 + 5(7) = 2 + 35 = (37)$

9. $5 - 2(7 \cdot 2 - 6)$

$5 - 2(14 - 6)$

$5 - 2(8)$

$5 - 16 = (-11)$

10. $-3 \cdot 4 - 5 \cdot 6$

$-12 - 30 = (-42)$

11. $\frac{3 \cdot 2 - 6}{7 - 5}$

$\frac{6 - 6}{7 - 5} = \frac{0}{2} = (0)$

12. $\frac{2^3 - 2^2}{2^2 - 2}$

$\frac{8 - 4}{4 - 2} = \frac{4}{2} = (2)$

Answer Key

Multiplying & Reducing Fractions

Multiply and reduce each product if necessary. (Note that the "dot" means to multiply.)

$$1. \frac{10}{12} \cdot \frac{4}{10} = \left(\frac{1}{3}\right)$$

$$2. \frac{12}{13} \cdot \frac{1}{4} = \left(\frac{3}{13}\right)$$

$$3. \frac{6}{10} \cdot \frac{5}{12} = \left(\frac{1}{4}\right)$$

$$4. \frac{8}{6} \cdot \frac{1}{2} = \left(\frac{1}{4}\right)$$

$$5. \frac{1}{3} \cdot 9 = \left(3\right)$$

$$6. 3 \cdot \frac{10}{12} = \left(\frac{5}{2}\right)$$

$$7. \frac{14}{15} \cdot 5 = \boxed{\frac{14}{3} \text{ or } 4\frac{2}{3}}$$

$$8. 1\frac{3}{7} \cdot \frac{2}{6} = \frac{10}{7} \cdot \frac{2}{3} = \left(\frac{10}{21}\right)$$

$$9. 1\frac{1}{5} \cdot \frac{4}{5} = \frac{6}{5} \cdot \frac{4}{5} = \left(\frac{24}{25}\right)$$

$$10. 2\frac{5}{6} \cdot \frac{1}{6} = \frac{17}{6} \cdot \frac{1}{6} = \left(\frac{17}{36}\right)$$

$$11. \frac{1}{2} \cdot 4\frac{5}{7} = \frac{1}{2} \cdot \frac{33}{7} = \left(\frac{33}{14}\right)$$

$$12. 2\frac{2}{3} \cdot 9\frac{2}{3} = \frac{8}{3} \cdot \frac{29}{3} = \left(\frac{232}{9}\right)$$

$$13. 5\frac{2}{3} \cdot 1\frac{4}{7} = \frac{17}{3} \cdot \frac{11}{7} = \left(\frac{187}{21}\right)$$

$$14. 2\frac{1}{6} \cdot 5\frac{1}{4} = \frac{13}{6} \cdot \frac{21}{4} = \left(\frac{91}{8}\right)$$

Answer Key

Dividing & Reducing Fractions

Divide and reduce the answer if necessary.

$$1. \frac{1}{6} \div \frac{9}{12} = \frac{1}{\cancel{6}_1} \cdot \frac{\cancel{12}^2}{9} = \left(\frac{2}{9} \right)$$

$$2. \frac{3}{6} \div \frac{4}{6} = \frac{\cancel{3}}{\cancel{6}_1} \cdot \frac{\cancel{6}^1}{4} = \left(\frac{3}{4} \right)$$

$$3. \frac{2}{7} \div \frac{2}{5} = \frac{\cancel{2}^1}{7} \cdot \frac{5}{\cancel{2}_1} = \left(\frac{5}{7} \right)$$

$$4. \frac{8}{9} \div \frac{3}{10} = \frac{8}{9} \cdot \frac{10}{3} = \left(\frac{80}{27} \right)$$

$$5. 3\frac{1}{6} \div \frac{5}{6} = \frac{\cancel{18}^1}{\cancel{6}_1} \cdot \frac{\cancel{6}^1}{5} = \left(\frac{19}{5} \right)$$

$$6. \frac{4}{9} \div 2\frac{1}{2} = \frac{4}{9} \cdot \frac{2}{5} = \left(\frac{8}{45} \right)$$

$$7. 1\frac{1}{2} \div \frac{5}{8} = \frac{\cancel{3}^1}{\cancel{2}_1} \cdot \frac{\cancel{8}^4}{5} = \left(\frac{12}{5} \right)$$

$$8. \frac{1}{2} \div 5 = \frac{1}{2} \cdot \frac{1}{5} = \left(\frac{1}{10} \right)$$

$$9. 8 \div \frac{2}{5} = \frac{\cancel{8}^4}{1} \cdot \frac{5}{\cancel{2}_1} = \left(20 \right)$$

$$10. \frac{4}{9} \div 6 = \frac{\cancel{4}^2}{9} \cdot \frac{1}{\cancel{6}_3} = \left(\frac{2}{27} \right)$$

$$11. 1\frac{5}{6} \div 2\frac{3}{7} = \frac{11}{6} \cdot \frac{7}{17} = \left(\frac{77}{102} \right)$$

$$12. 3\frac{1}{5} \div 1\frac{2}{3} = \frac{16}{5} \cdot \frac{3}{5} = \left(\frac{48}{25} \right)$$

Answer Key

Solving Equations I

Solve each equation.

$$1. \frac{6}{2} = \frac{2x}{2}$$

$$x = 3$$

$$2. \frac{-7a}{-7} = \frac{-14}{-7}$$

$$a = 2$$

$$3. \frac{7y}{7} = \frac{0}{7}$$

$$y = 0$$

$$4. \frac{3n}{3} = \frac{-186}{3}$$

$$n = -62$$

$$5. 3b + 2b = -10$$

$$5b = -10$$

$$b = -2$$

$$6. 35 = x + 6x$$

$$35 = 7x$$

$$x = 5$$

$$7. 3a - 4a = 4$$

$$-a = 4$$

$$a = -4$$

$$8. 8x - 2x = 30$$

$$6x = 30$$

$$x = 5$$

$$9. 9x - 12x = -15$$

$$-3x = -15$$

$$x = 5$$

$$10. 5 = 2p - 7$$

$$+7 \quad +7$$

$$12 = 2p$$

$$p = 6$$

$$11. \frac{-8}{-2} = \frac{3y + 2}{-2}$$

$$-10 = 3y$$

$$y = -\frac{10}{3}$$

$$12. \frac{-5x}{+5x} = \frac{3x}{+5x}$$

$$0 = 8x$$

$$x = 0$$

$$13. \frac{5}{-2} = \frac{2 - 3x}{-2}$$

$$3 = -3x$$

$$x = -1$$

$$14. \frac{6 - 2x}{-6} = \frac{-10}{-6}$$

$$-2x = -16$$

$$x = 8$$

$$15. \frac{2y + 5}{-2y - 2} = \frac{5y + 2}{-2y - 2}$$

$$3 = 3y$$

$$y = 1$$

$$16. \frac{3x - 4}{-2x + 4} = \frac{2x - 24}{-2x + 4}$$

$$-2x + 4 \quad -2x + 4$$

$$x = -20$$

$$17. \frac{8 - 2y}{-1 + 2y} = \frac{1 + y}{-1 + 2y}$$

$$7 = 3y$$

$$y = \frac{7}{3}$$

$$18. \frac{12 - 2a}{-4 + 2a} = \frac{4 + a}{-4 + 2a}$$

$$-4 + 2a \quad -4 + 2a$$

$$8 = 3a$$

$$a = \frac{8}{3}$$

Answer Key

Solving Inequalities

Solve each inequality below.

1. $x+18 \geq 3$

$$x \geq -15$$

2. $x-4 < -12$

$$x < -8$$

3. $3x+9 \leq -6$

$$3x \leq -15$$

$$x \leq -5$$

4. $-2+2x < 6$

$$2x < 8$$

$$x < 4$$

5. $11+x \geq 1$

$$x \geq -10$$

6. $2x-5 < -3$

$$2x < 2$$

$$x < 1$$

7. $5 > x-4$

$$9 > x \quad x < 9$$

8. $10 \leq x+2$

$$8 \leq x \quad x \geq 8$$

8. $5x+1 > 2x+16$

$$3x > 15$$

$$x > 5$$

10. $7a-9 > 6a+11$

$$a > 20$$

11. $3x-5 \leq 4x+8$

$$-4x+5 \leq -4x+15$$

$$-x \leq 13$$

$$x \geq -13$$

Answer Key

Comparing and Ordering Numbers

Order the numbers from least to greatest.

1. 3, -5, -2.4, 1

$-5, -2.4, 1, 3$

2. $\frac{1}{4}, \frac{-1}{2}, \frac{2}{5}, -2$ $\frac{1}{4} = .25$ $\frac{2}{5} = .4$

$-2, -\frac{1}{2}, \frac{1}{4}, \frac{2}{5}$

3. -13, -100, -2, -0.1, -45

$-100, -45, -13, -2, -0.1$

4. -0.01, 0.1, 0, -0.1

$-0.1, -0.01, 0, 0.1$

5. $\frac{9}{10}, \frac{4}{5}, \frac{2}{3}, \frac{1}{2}$

common denominator of 30

$\frac{27}{30}, \frac{24}{30}, \frac{20}{30}, \frac{15}{30}$

$\frac{15}{30}, \frac{20}{30}, \frac{24}{30}, \frac{27}{30} = \boxed{\frac{1}{2}, \frac{2}{3}, \frac{4}{5}, \frac{9}{10}}$

Complete The Following Table

	FRACTION Simplify Completely	DECIMAL	PERCENT
1	$\frac{16}{100}$	0.16	16%
2	$\frac{3}{5}$	0.60	60%
3	$\frac{7}{8}$	0.875	87.5%
4	$\frac{5}{6}$	$0.8\bar{3}$	83.3%
5	$2\frac{1}{4}$	2.25	225%
6	$\frac{9}{20}$	0.45	45%
7	$\frac{1}{500}$	0.002	0.2%
8	$1\frac{3}{4}$	1.75	175%
9	$\frac{3}{40}$	0.075	7.5%
10	$1\frac{1}{400}$	1.0025	100.25%
11	$\frac{7}{10}$	0.70	70%
12	$\frac{29}{400}$	0.0725	7.25%
13	$1\frac{1}{10}$	1.10	110%
14	$\frac{9}{400}$	0.0225	$2\frac{1}{4}\%$
15	$\frac{1}{200}$	0.005	$\frac{1}{2}\%$

Addition, Subtraction, Multiplication & Division of Signed Numbers I

- 1) $-3(8) = -24$
- 2) $5 - 21 = -16$
- 3) $\frac{-3}{6} = -\frac{1}{2}$
- 4) $-5 - 21 = -26$
- 5) $1(-1)(1)(-1)(-1) = -1$
- 6) $-6 + (-9) = -15$
- 7) $18 / (-3) = -6$
- 8) $\frac{-10}{-12} = \frac{5}{6}$
- 9) $7 - (8) = -1$
- 10) $7(-8) = -56$
- 11) $5 - 4 - 3 - 2 - 1 = -5$
- 12) $-6(-1) = 6$
- 13) $(-2) / (-8) = \frac{1}{4}$
- 14) $-10 - 10 = -20$
- 15) $(8) - 3 = 5$
- 16) $-8 - 2 = -10$
- 17) $4(-2)(-3) = 24$
- 18) $4 + (-3) - 6 = -5$
- 19) $-8 - 6 = -14$
- 20) $(-1)(-2)(-3)(-4) = 24$
- 21) $3 - 7 = -4$
- 22) $3 + (-12) = -9$
- 23) $-1 - 1 - 1 - 1 = -4$
- 24) $1 + (-4) - (-3) - 2 = -2$
- 25) $1 + 4(2) = 9$
- 26) $\frac{8}{-4} = -2$
- 27) $4 - (-5) - 3 = 6$
- 28) $1(-2)3(-4) = 24$