

## Summer Review Assignments for Algebra 1

Due: First Day of School

Textbook: Algebra 1 ISBN: 978-0-618-59402-3

Dear Parents and Students:

We hope that your family is enjoying a great summer with plenty of relaxation and fun. Your teachers for next year are already making plans for our new school year, and we are all looking forward to meeting you in August. **Please read through this entire letter.**

These summer assignments are designed to be a review of essential math skills. They include only problems covering math concepts and skills that are necessary for success in Algebra 1. **There will be an assessment covering these essential skills during the first week of class. The grade will be counted as a Quiz grade in the semester grade.**

We recommend that you take at least 10 days to complete these assignments. The summer review work will prepare students for the assessment while allowing teachers more instructional time and the ability to progress into new material sooner.

### Parent Instructions:

- 1) Print these practice worksheets and give them to your student—making sure that he or she understands the directions for completing the review work.
- 2) **Parents, so that you know how well-prepared your student is for Algebra 1, we ask that YOU check the answers and mark incorrect answers with a colored pen, pencil, or marker. The answers are included at the end of this document.**
- 3) Write the grade in the UPPER RIGHT corner (number correct divided by number attempted 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, you need to make sure he or she gets help to learn these skills now. There will not be class time available to re-teach these essential skills once school begins in August. You, a more experienced sibling, or a tutor could provide the needed help.
- 4) Give the assignment back to your student and assign the incorrect problems again—the work should be done to the right of the original work. If the student needs help from a tutor, it is acceptable for this part of the assignment to be done with the help of the tutor.

## Summer Review Assignments for Algebra 1

### Student Instructions:

- 1) Please work **all** of the practice exercises to be sure you understand the concepts.
- 2) Do your work **NEATLY** and **IN PENCIL** on notebook paper, working **ONLY** down the left side of each page.
- 3) Print your name on the top line of the notebook paper next to the right margin. Staple together all sheets of a lesson in the upper left corner.
- 4) Copy the problem.
- 5) Show all the steps of work needed to get your answer.
- 6) **BOX** your answer.
- 7) **When you complete a lesson, give it back to your parent who will check your answers.**
- 8) Your parent will return the lesson to you so that you can re-work any problems that you miss. You will do this work to the right of the original work. If you need help from a tutor, it is acceptable for this part of the assignment to be done with the help of the tutor.
- 9) **Thanks for your hard work on these summer assignments. THIS WORK IS DUE ON THE FIRST DAY OF SCHOOL. This homework grade will be counted in the semester grade.**

## 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 <small>Simplify Completely</small>	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)  $1(-2)3(-4) =$

Answer  
Key

Order of Operations Worksheet

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

$$\begin{aligned} 1. & 4^2 - (2 \cdot 3^3 \cdot 1) \div 2 \\ & 16 - 54 \div 2 \\ & 16 - 27 = \textcircled{-11} \end{aligned}$$

$$\begin{aligned} 2. & (6 \cdot 2) + 2 \\ & 12 + 2 = \textcircled{14} \end{aligned}$$

$$\begin{aligned} 3. & [(-2)^2 - 6 \cdot 7] \\ & 4 - 42 = \textcircled{-38} \end{aligned}$$

$$\begin{aligned} 4. & 9^2 + [(-1)^3 + 3] \cdot 9 \\ & 81 + [-1 + 3] \cdot 9 \\ & 81 + [2] \cdot 9 \\ & 81 + 18 = \textcircled{99} \end{aligned}$$

$$\begin{aligned} 5. & 3 \div 1 \cdot 2^3 - 5 \\ & 3 \div 1 \cdot 8 - 5 \\ & 3 \cdot 8 - 5 \\ & 24 - 5 = \textcircled{19} \end{aligned}$$

$$\begin{aligned} 6. & 2 \cdot 2 \cdot 2 - 2 \\ & 8 - 2 = \textcircled{6} \end{aligned}$$

$$\begin{aligned} 7. & (-2)^3 + (2 - 1 - 1) \\ & -8 + 0 = \textcircled{-8} \end{aligned}$$

$$\begin{aligned} 8. & 2 + 5(2 \cdot 5 - 3) \\ & 2 + 5(10 - 3) \\ & 2 + 5(7) = 2 + 35 = \textcircled{37} \end{aligned}$$

$$\begin{aligned} 9. & 5 - 2(7 \cdot 2 - 6) \\ & 5 - 2(14 - 6) \\ & 5 - 2(8) \\ & 5 - 16 = \textcircled{-11} \end{aligned}$$

$$\begin{aligned} 10. & -3 \cdot 4 - 5 \cdot 6 \\ & -12 - 30 = \textcircled{-42} \end{aligned}$$

$$\begin{aligned} 11. & \frac{3 \cdot 2 - 6}{7 - 5} \\ & \frac{6 - 6}{7 - 5} = \frac{0}{2} = \textcircled{0} \end{aligned}$$

$$\begin{aligned} 12. & \frac{2^3 - 2^2}{2^2 - 2} \\ & \frac{8 - 4}{4 - 2} = \frac{4}{2} = \textcircled{2} \end{aligned}$$

# Answer Key

## Multiplying & Reducing Fractions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

# Answer Key

## Dividing & Reducing Fractions

Divide and reduce the answer if necessary.

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

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

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

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

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

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

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

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

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

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

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

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

# Answer Key

## Solving Equations I

Solve each equation.

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

$$x = 3$$

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

$$a = 2$$

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

$$y = 0$$

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

$$n = -62$$

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

$$5b = -10$$

$$b = -2$$

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

$$35 = 7x$$

$$x = 5$$

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

$$-a = 4$$

$$a = -4$$

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

$$6x = 30$$

$$x = 5$$

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

$$-3x = -15$$

$$x = 5$$

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

$$+7 \quad +7$$

$$12 = 2p$$

$$p = 6$$

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

$$-10 = 3y$$

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

$$12. -5x = 3x$$

$$+5x \quad +5x$$

$$0 = 8x$$

$$x = 0$$

$$13. 5 = 2 - 3x$$

$$-2 \quad -2$$

$$3 = -3x$$

$$x = -1$$

$$14. 6 - 2x = -10$$

$$-6 \quad -6$$

$$-2x = -16$$

$$x = 8$$

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

$$3 = 3y$$

$$y = 1$$

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

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

$$x = -20$$

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

$$-1 \quad +2y \quad -1 \quad +2y$$

$$7 = 3y$$

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

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

$$-4 \quad +2a \quad -1 \quad +2a$$

$$8 = 3a$$

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

# 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.  $5 > x-4$

$$9 > x$$

$$x < 9$$

8.  $10 \leq x+2$

$$8 \leq x$$

$$x \geq 8$$

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

$$3x > 15$$

$$x > 5$$

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

$$a > 20$$

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

$$-4x+5 \leq -4x+8$$

$$-x \leq 13$$

$$x \geq -13$$

# 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

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

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

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