

## Algebra 1 Summer Assignment

### Instructions:

Solve each problem without the use of a calculator. Students should select five problems from each section to complete. Students are encouraged to challenge themselves in their selection of problems. If a student is struggling with a section, there are links to videos provided. To join the class to view the videos, use the code owufiop

The answers are provided at the end. Students should check their answers as they work and refer to the videos if they are having trouble getting the correct answer.

Students may choose to print these pages or complete the problems on a separate piece of paper.

### Section 1: Simplifying expressions

Help video #1: <https://edpuzzle.com/assignments/58e2811cf57d1b32bcbbfd51/watch>

Help video #2: <https://edpuzzle.com/assignments/58e2878359029e3457843b38/watch>

**Evaluate each expression. Complete at least five problems from this set.**

1)  $(-18 \div 3)(5^2 - 3^3)$

2)  $-12 \div (3 - (4)(-6) - 5^2)$

3)  $(-3 - -1)^3 - ((-6)(-3) - 5)$

4)  $\frac{8}{3} - \frac{1}{1+2} + \left(\frac{1}{2}\right)^2$

5)  $\frac{1}{3} + 5 - 2 + \frac{5}{4} + \frac{5}{4} - \frac{5}{4}$

6)  $\frac{11}{3} + \frac{7}{5} \cdot 2 - \left(2 + \frac{4}{3} - \frac{11}{6}\right)$

$$7) 5 + 6 - \frac{9}{1+2} - 1$$

$$8) \frac{8}{(2)(6 - ((5)(2) - 5))}$$

$$9) \frac{11 - (1 + 4)}{(2 - 1)(2)}$$

$$10) \frac{10}{4 + 4 - (6 - 6) - 6}$$

Section 2: Combining like terms

Help Video: <https://edpuzzle.com/assignments/58e285b449992523fcb327e7/watch>

**Simplify each expression. You should complete at least five problems from this set.**

1)  $-4n + 7 + 7n$

2)  $10x + 3 + 9x - 7$

3)  $3 - 4k + k + 5$

4)  $8 + 2x + 2$

5)  $10(n + 10) - 10$

6)  $-6(6 - 10x) + 4x$

$$7) 8k - (9 + 10k)$$

$$8) 10(1 - 8a) - 5$$

$$9) -5(1 - 3x) - (x + 5)$$

$$10) 3(2x - 3) - (2 + 5x)$$

### Section 3: Solving one step equations

Help Video: <https://edpuzzle.com/assignments/58e28a1459029e3457846aa9/watch>

$$1.) x - 12 = 6$$

$$2.) 2x = 11$$

$$3.) 7 - x = 15$$

$$4.) \frac{x}{4} = 10$$

$$5.) x + 3 = 1$$

$$6.) x - \frac{3}{2} = \frac{5}{3}$$

$$7.) 5x = \frac{11}{2}$$

$$8.) \frac{2}{3}x = 6$$

$$9.) -2x = 16$$

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

Section 4: Translating expressions

Help Video: <https://edpuzzle.com/assignments/58e289de749baf455bd5d57e/watch>

**Write each phrase as an algebraic equation. Answer at least five questions from this set.**

- 1) 12 more than a number is 19.
- 2) The quotient of a number and 9 is the same as the difference of 14 and 8.
- 3) 4 times a number cubed decreased by 7 is equivalent to 5 squared.
- 4) 15 less than a number squared is equivalent to the product of 7 and 3.
- 5) The product of 5 and y added to 3 is 38.
- 6) The product of 4 and x is the same as the quotient of 18 and y.
- 7) Four fifths of a number is equivalent to five.
- 8) One fourth the sum of r and ten is identical to 4 less than r.
- 9) The product of 4 and the sum of a and b is the same as the quotient of 8 and a.
- 10) The area A of a circle is the product of pi and the radius r squared.

Section 1 Answer Key:

- |                    |                     |        |                    |
|--------------------|---------------------|--------|--------------------|
| 1) 12              | 2) -6               | 3) -21 | 4) $\frac{31}{12}$ |
| 5) $\frac{55}{12}$ | 6) $\frac{149}{30}$ | 7) 7   | 8) 4               |
| 9) 3               | 10) 5               |        |                    |

Section 2 Answer Key:

- |               |              |               |               |               |
|---------------|--------------|---------------|---------------|---------------|
| 1) $3n + 7$   | 2) $19x - 4$ | 3) $-3k + 8$  | 4) $2x + 10$  | 5) $10n + 90$ |
| 6) $64x - 36$ | 7) $-2k - 9$ | 8) $-80a + 5$ | 9) $14x - 10$ | 10) $x - 11$  |

### Section 3 Answer Key

1)  $x = 18$

2)  $x = 11/2$

3)  $x = -8$

4)  $x = 40$

5)  $x = -2$

6)  $x = 19/6$

7)  $x = 11/10$

8)  $x = 9$

9)  $x = -8$

10)  $x = 8$

### Section 4 Answer Key

1)  $12 + n = 19$

2)  $n \div 9 = 14 - 8$

3)  $4n^3 - 7 = 5^2$

4)  $n^2 - 15 = 7 \cdot 3$

5)  $5y + 3 = 38$

6)  $4x = 18 \div y$

7)  $\frac{4}{5}n = 5$

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

9)  $4(a + b) = 8 \div a$

10)  $A = \pi r^2$