



# **AcadeMir Charter Schools**

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## **2024 SUMMER INCOMING GEOMETRY MATH PACKET**

**Please turn into your Math teacher by Friday, August 23<sup>rd</sup>.**

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# ACADEMIR CHARTER SCHOOLS



Dear incoming Geometry student,

We hope you had a wonderful year in school!

This summer math packet has been created to help you review and prepare for Geometry. It covers many of the math topics that you learned in class this year, which we will be building on next year.

- Please show all of your work for every problem in the packet. You can show your work on a separate sheet of paper.
- The paper should be neatly organized - with every problem numbered.
- Highlight, draw a box, or draw a circle around your final answers.
- You **MAY** use a calculator

*\*Note: If you submit your summer packet without the work, you **WILL NOT** receive full credit.*

The completed packet is due on the first week of school by:

Friday, August 23<sup>rd</sup>.

It will count as your first math grade of the new school year.

We hope you have a nice summer and look forward to seeing you in August!

# ALGEBRA REVIEW

for incoming Geometry  
students.

*Can you...*

- use the distributive property?
- multiply polynomials?
- solve a multi-step equation?
- factor out a GCF?
- factor quadratics?
- solve a quadratic equation?
- complete the square?
- solve a proportion?
- transform a formula?
- simplify radicals?
- calculate slope?
- write the equation of a line?

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

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

# THE DISTRIBUTIVE PROPERTY

**Simplify each of the following expressions.**

1.  $2(4x+7)$

2.  $4x(5xy+2x^2)$

3.  $3(x^2+5x+6)$

4.  $-5y(3x^2y-4x)$

5.  $8xy(-5x^2+2x^2y)$

6.  $-(7y+2x-3z)$

7.  $5x^2(7x+1)$

8.  $7yz(2x^2-3y+4z)$

9.  $\frac{1}{2}(3x^3+4x-1)$

10.  $15-3(2x+y)$

11.  $-8x+3(6+8x)$

12.  $\frac{4}{3}(4y+3)$

13.  $x^2(x^3+x^4+x^5)$

14.  $7(2x-3)+6(x^2y+1)$

15.  $4(-3x+2)-(5y+6)$

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# MULTIPLYING POLYNOMIALS

**Multiply and simplify.**

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

2.  $(x-2)(x-4)$

3.  $(x+6)(x-1)$

4.  $(x-2)(x+2)$

5.  $(x-12)(x+4)$

6.  $(x+6)(x-6)$

7.  $(2x+1)(3x-4)$

8.  $(4x-5)(4x+5)$

9.  $(x^3+2x)(x-8)$

10.  $(2x+y)(2x+y)$

11.  $(x^2+1)(x-5)$

12.  $(x^2-2)(x^2+9)$

13.  $(x+1)(x^2+5x+6)$

14.  $(x-5)(2x^3-5x^2-1)$

15.  $(2x+7)(x^2-x+3)$

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

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

# SOLVING MULTI-STEP EQUATIONS

**Solve for all values of x.**

1.  $2x+5=17$

2.  $2-3x=11$

3.  $\frac{1}{2}x+6=22$

4.  $3(x+5)=18$

5.  $5x+7=3x-2$

6.  $8(x-2)+6=4x-10$

7.  $5-\frac{1}{3}(x-6)=4x$

8.  $\frac{2}{9}\left(x+\frac{3}{2}\right)=\frac{2}{3}$

9.  $-3(3x+4)=6-15x$

10.  $\frac{x-2}{3}+\frac{1}{6}=\frac{5}{6}$

11.  $\frac{x+3}{2}+\frac{2x}{7}=7$

12.  $\frac{1}{4}=\frac{3x}{5}-5$

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

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# GREATEST COMMON FACTOR

**Simplify each of the following expressions.**

1.  $4x+12$

2.  $9x^4-3x+27$

3.  $20x-5$

4.  $65x+52xy-13x^2$

5.  $8xy+16x^2$

6.  $9x^5-36x^3+18x$

7.  $-20x^3-80x^2$

8.  $11x^6-11x^2+11$

9.  $2x^2+8x+8$

10.  $\frac{1}{2}x+\frac{5}{2}x^3$

11.  $-4x-8xy$

12.  $15y+30x$

13.  $x^2+5x+6$

14.  $4x^3-44x^2+28x$

15.  $\frac{2}{5}y^2z+\frac{3}{5}yz-\frac{4}{5}yz^2$

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

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# FACTORIZING QUADRATICS

Factor completely.

1.  $x^2 + 7x + 12$

2.  $x^2 - 25$

3.  $x^2 + 10x + 24$

4.  $x^2 - 49$

5.  $x^2 - 9x + 20$

6.  $x^2 - x - 30$

7.  $x^2 - 2x - 80$

8.  $x^2 - 7x - 18$

9.  $x^2 - 64$

10.  $4x^2 - 100$

11.  $3x^2 - 147$

12.  $3x^2 - 3x - 126$

13.  $2x^2 + 8x + 8$

14.  $9x^2 + 24x + 16$

15.  $3x^2 - 23x - 8$



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

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

# SOLVING QUADRATICS

**Solve for all values of x.**

1.  $x^2 + 8x + 7 = 0$

2.  $x^2 - 11x + 18 = 0$

3.  $x^2 - x - 90 = 0$

4.  $x^2 + 6x + 9 = 0$

5.  $x^2 - 81 = 0$

6.  $x^2 - 144 = 0$

7.  $2x^2 + 12x + 16 = 0$

8.  $3x^2 - 12 = 0$

9.  $x^2 + 3x = 18$

10.  $2x^2 = 50$

11.  $x^2 + 100 = -25x$

12.  $3x^2 + 7x + 2 = 0$

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

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# COMPLETING THE SQUARE

**Solve for all values of x.**

1.  $x^2 + 8x + 5 = 0$

2.  $x^2 - 10x + 6 = 0$

3.  $x^2 + 4x - 2 = 0$

4.  $x^2 + 6x + 7 = 0$

5.  $x^2 - 2x - 5 = 0$

6.  $x^2 - 12x - 7 = 0$

7.  $x^2 - 6x = -2$

8.  $x^2 - 4x = 1$

9.  $x^2 + 10x = 15$

10.  $x^2 - x + 1 = 0$

11.  $x^2 + 3x + 5 = 0$

12.  $2x^2 + 5x = 4$

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

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

# SOLVING PROPORTIONS

**Solve for all values of x.**

$$1. \frac{2}{x} = \frac{8}{12}$$

$$2. \frac{x}{5} = \frac{15}{25}$$

$$3. \frac{9}{4} = \frac{x}{6}$$

$$4. \frac{3}{9} = \frac{8}{x-10}$$

$$5. \frac{5}{x-8} = \frac{8}{3}$$

$$6. \frac{5}{2} = \frac{x-1}{6}$$

$$7. \frac{x}{5} = \frac{x+2}{9}$$

$$8. \frac{x-10}{7} = \frac{x}{4}$$

$$9. \frac{x+8}{10} = \frac{x-9}{4}$$

$$10. \frac{x-4}{x+6} = \frac{3}{7}$$

$$11. \frac{x+3}{4} = \frac{11}{x-4}$$

$$12. \frac{x+4}{3} = \frac{2}{x+5}$$