AcadeMir Charter Schools

2024 SUMMER INCOMING GEOMETRY MATH PACKET

AcadeMir Charter School West
2024 Summer Learning Requirements

Dear Parent(s)/Guardian(s),

In preparation for the 2024 – 2025 school year and to ensure that our students maintain growth-oriented academia during the summer, the school curriculum team has created the following Summer Learning assignment for each student to complete by the first day of school. Each student must complete the Summer Learning Packet over the summer and turn it in to your classroom teacher by August 23, 2024.

Summer Reading

ACSW students will be expected to read the novel from the reading list for their incoming grade level. For example, if your child is entering 1st grade in the fall, he/she would read the 1st grade novel and complete the activity. Please note that this assignment will be worth one grade for Reading and one grade for Language Arts.

Mathematics Activities

ACSW students are required to complete the mathematics packet that pertains to their incoming grade level and/or assignment. For example, if your child is in the Accelerated Mathematics course in the elementary level, he/she needs to complete the Accelerated packet. For middle school, Algebra, Geometry, etc. is separated from the ELA, Science, and Social Studies packet. Please ensure that you do all the components.

Thank you for your partnership in ensuring your child continues to strive for excellence over the summer!
We look forward to an outstanding 2024 – 2025 school year!

Sincerely,

Susie Bello, Principal
AcadeMir Charter School West
bello@academircharterschoolwest.com

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 <u>show all of your work</u> 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.*

<u>The completed packet is due on the first week of school by:</u>

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

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

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

SOLVING MULTI-STEP EQUATIONS

Solve for all values of x.

1. $2x+5=17$

2. $2-3x=11$

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

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

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

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

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

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

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

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

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

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

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

11. $-4x-8xy$

12. $15y+30x$

13. x^2+5x+6

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

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

Name: _____   Date: _____

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

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

SOLVING PROPORTIONS

Solve for all values of x.

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

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

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

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

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

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

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

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

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

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

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

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