



**Pre Algebra Summer Math Packet  
For Students Entering either Pre Algebra 7 or Pre Algebra 8**

Revised 5/2025

**Directions:** Your summer math packet is broken down into 3 sections that cover the essential math skills needed to be successful in PreAlgebra. Your packet will be collected and counted as a Homework grade.

**YOU MUST SHOW ALL WORK FOR CREDIT!!** For each section:

- Complete the practice problems.(be sure to review them again right before school starts!)
- Watch the EdGems/YouTube Video Lessons to refresh your memory of skills you learned this past year.

At the end of this packet you will find additional (optional) skill practice in IXL on important topics that will prepare you for your next math course.

- *You may already have earned a smart score of 80 in some of the listed IXL skill sets. If so, then please consider working towards a smart score of 95-100.*

**Section I: Rates and Proportional Relationships**

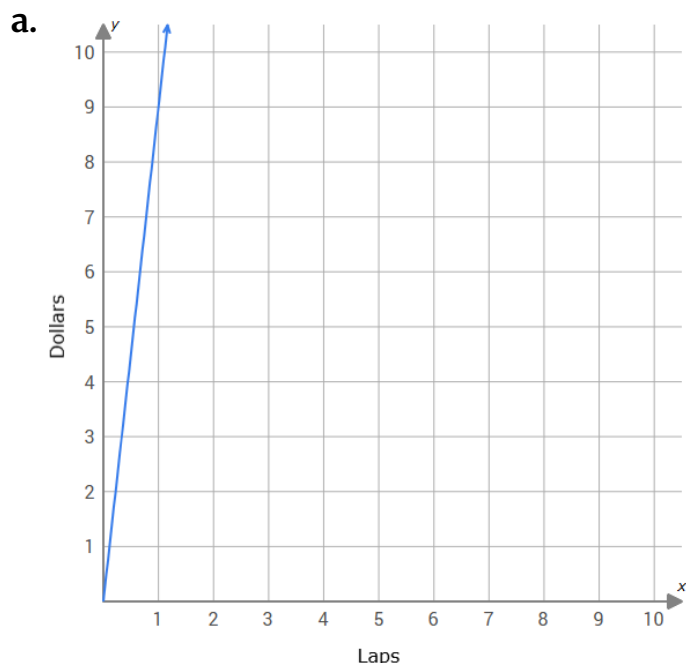
EdGems Video Lesson Links

[Unit Rates with complex fractions](#)  
[Tables and Graphs of Proportional Relationships](#)  
[Proportional Relationship Equations](#)  
[Percent Change](#)  
[7.4 Coordinate Plane](#)

1.) A rocket travels 1 mile in  $\frac{1}{10}$  of a second. How fast does it travel in miles per minute?

2.) Abby's cup of coffee cooled down  $\frac{1}{2}$  of a degree in 10 seconds. At what rate is her coffee cooling down? (degrees per second)

3.) Look at the graph and table below and determine the constants of proportionality.



**b.**

$x$ (cups of pecans)	$y$ (pralines)
2	14
8	56
16	112
17	119

**C.O.P.** = \_\_\_\_\_

**C.O.P.** = \_\_\_\_\_

4.) Read the description of the proportional relationship, then answer the questions that follow;

Adriana is excited because her grandfather in New Orleans is going to teach her how to make pralines! There is a proportional relationship between the amount of pecans (in cups) Adriana's grandfather uses,  $x$ , and the number of pralines he makes,  $y$ .

Adriana's grandfather uses 6 cups of pecans to make 24 pralines

**a.** Write the equation that represents the proportional relationship between  $y$  and  $x$

**b.** How many pralines can the grandfather make with 10 cups of pecans?

**c.** Adrian wants to make 72 pralines, how many cups of pecans will the grandfather need?

5.) What is the percent decrease from 60 to 27?

6.) What is the percent increase from 5 to 6?

7. Write the ordered pair for each point on the coordinate plane below.

a. P \_\_\_\_\_

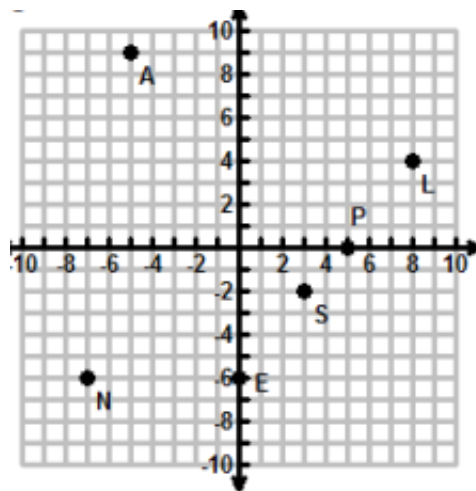
b. L \_\_\_\_\_

c. A \_\_\_\_\_

d. N \_\_\_\_\_

e. E \_\_\_\_\_

f. S \_\_\_\_\_



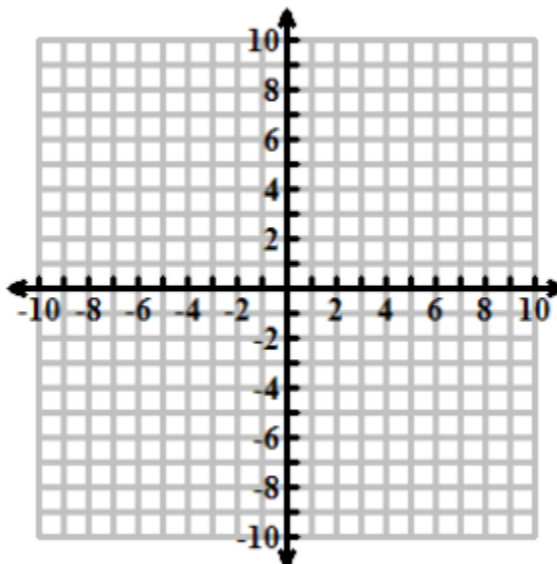
8.) On the coordinate plane below, graph and label the following ordered pairs.

a. M (0, 6)

b. U (9, 4)

c. S (-3, 2)

d. I (-4, -1)





**Section II: The Number System**

Ed Gems Video Lesson Links

[Adding Integers](#)  
[Subtracting Integers](#)  
[Multiplying and Dividing Integers](#)  
[5.2 Order of Operations](#)  
[Add Rational Numbers](#)  
[Subtract Rational Numbers](#)  
[Multiply Rational Numbers](#)  
[Divide Rational Numbers](#)  
[Fractions, Decimals and Percents](#)

*Find the value of each expression without a calculator.*

9.)  $8 + (-4) =$       10.)  $-20 + 34 =$       11.)  $-12 - 17 =$       12.)  $14 - (-2) =$

13.)  $7 \cdot (-4)$

14.)  $-10(-2)$

15.)  $54 \div (-9)$

16.)  $\frac{-48}{-8} =$

17.) *Find the value of each expression.*

a.  $(3 + 4)^2 - 14$

b.  $16 \div 2 + 4 \times (7 - 3)$

a.

b.

c.  $4 \times 3 + \frac{6+9}{3}$

d.  $12 \div 3 + \frac{2+7}{5-2} - 6$

e.  $\frac{9}{10} + (-\frac{1}{2}) =$

f.  $(-4.1) - (-3.6) =$



18.) Find each product or quotient without a calculator.

a.  $(-4.65)(-0.2) =$

b.  $\frac{4}{5} \div \frac{7}{10} =$

19.) Write  $\frac{1}{4}$  as a decimal number

20.) write  $67\frac{13}{50}$  as a decimal number

**Section III: Expressions and Equations**

Video Lesson Links

[Algebraic Expressions](#)  
[5.6 Distributive Property](#)  
[Equivalent Expressions](#)  
[Solving two-step Equations](#)  
[Simplifying and Solving Equations](#)  
[Linear inequalities](#)

21.) Evaluate each expression below for  $c=5$ ,  $d=6$ , and  $f=-2$

a.)  $2d - f$

b.)  $8f + c$

c.)  $\frac{9f}{d}$

d.)  $-3c + f^2$

22.) Simplify the expressions

a.)  $4q + 6 - 2q - 16$

b.)  $3 + 10x - 6 + 10$

c.)  $-9 - 6d - 3d + 5d$

d.)  $2r - r + 10r - 5r$



23.) *Simplify each expression (use the distributive property and combine like terms when possible).*

a.  $3(k + 4)$

b.  $4(y - 0.2)$

c.  $7 + 2(6x + 3) - 8$

d.  $3(m + 6) - 7(m - 2)$

24.) *Factor each expression using the greatest common factor.*

a.  $10 + 35$

b.  $2m + 10$

**Solve each equation**

25.)  $\frac{x}{2} + 9 = 12$

26.)  $-2(v - 8) = -8$

27.)  $12 = 4g + 8$

28.)  $\frac{h-6}{2} = 2$

**Solve each equation**

29.)  $9w + 3(w + 12) = -108$

30.)  $3x + 7 = 16$

31.)  $-3(y - 5) = -9$



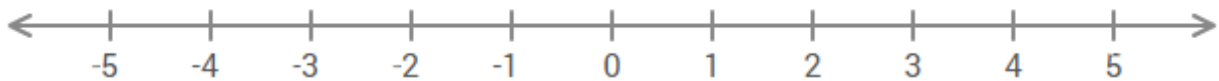
32.)  $18 = 6m + 6$

33.)  $k - 45 = 5$

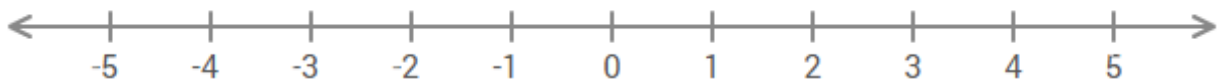
34.)  $5z + 2(z + 10) = -36$

35.) Solve the inequalities and graph the solutions

a.  $1 < \frac{a}{2} - 1$



b.  $4 > \frac{a}{3} + 5$



**Additional recommended (optional) IXL practice. Log into IXL through ClassLink and type the codes below into the search bar. If you have already earned a smart score of 80 in some of the listed IXL skill sets, please consider working towards a smart score of 95-100.**

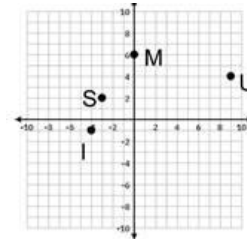
<b>IXL - Additional Recommended Practice</b> <i>(log in to IXL through ClassLink, then type the codes below into search bar)</i>	
<b>Section 1</b>	
Calculate unit rates with fractions: <b>57X</b>	Percent of change: <b>BL7</b>
Find the constant of proportionality from a graph: <b>ZUT</b>	Objects on a coordinate plane: <b>GFN</b>
Find the constant of proportionality from a table: <b>LKZ</b>	Graph points on a coordinate plane: <b>VHQ</b>
Write and solve equations for proportional relationships: <b>VKK</b>	
<b>Section 2</b>	
Add, subtract, multiply, and divide integers: <b>B8A</b>	Multiply and divide rational numbers: <b>BXW</b>
Identify mistakes involving Order of Operations: <b>V46</b>	Convert fractions or mixed numbers to decimals: <b>M2D</b>
Add and subtract rational numbers: <b>GKU</b>	
<b>Section 3</b>	
Evaluate multi-variable expressions: <b>T56</b>	Factor numerical expressions using the distributive property: <b>MX2</b>
Simplify expressions by combining like terms: <b>JJG</b>	Multiply using the distributive property: <b>2HH</b>
Solve two-step equations: <b>QEB</b>	Factor variable expressions using the distributive property: <b>PGZ</b>
Solve multistep equations: <b>ZDD</b>	Solve and graph inequalities: <b>NDQ</b>



**ANSWER KEY - Summer Math Packet for students Entering PreAlgebra**

1. 600 miles per second
2. .05 degrees per second
3. a. C.O.P.= 9    b. C.O.P.= 7
4. a.  $y=4x$       b. 40 pralines      c. 18 cups
5. 55% decrease
6. 20% increase

7. P(5,0) L(8,4) A(-5,9) N(-7,-6) E(0,-6) S(3,-2)    8.



9. 4    10. 14      11. -29      12. 16

13. -28    14. 20    15. -6      16. 6

17. a. 35    b. 24    c. 17    d. 1    e.  $\frac{2}{5}$     f. -0.5

18. a. 0.93    b.  $1\frac{1}{7}$

19. .25      20. 67.26

21. a. 14      b. -11      c. -3      d. -11

22. a.  $2q-10$     b.  $10x+7$     c.  $-4d-9$     d.  $6r$

23. a.  $3k+12$     b.  $4y-0.8$     c.  $12x+5$     d.  $10m+32$

24. a.  $5(2+7)$     b.  $2(m+5)$

25.  $x=6$       26.  $v=12$

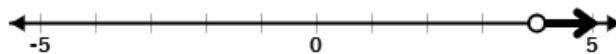
27.  $g=1$       28.  $h=10$

29.  $w=-12$     30.  $x=3$

31.  $y=8$       32.  $m=2$

33.  $k=50$       34.  $z=-8$

35. a.  $4 < a$  or  $a > 4$



b.  $-3 > a$  or  $a < -3$

