Summer 2026 Math Packet

Rising 8th Grade : 7 Pre–Algebra to Algebra 1



Suggested Pacing

Week 1	Sunday, June 28	Saturday, July 4	**Complete two Delta Math** **Evaluating Expressions Worksheet #1-10**
Week 2	Sunday, July 5	Saturday, July 11	**Complete two Delta Math** **Percent worksheet #1-10**
Week 3	Sunday, July 12	Saturday, July 18	**Complete two Delta Math** **Adding/Subtracting Rational Numbers #1-10**
Week 4	Sunday, July 19	Saturday, July 25	**Complete two Delta Math** **Multiply/Divide rational numbers and integers (both worksheets)**
Week 5	Sunday, July 26	Saturday, August 1	**Complete two Delta Math** **Two-step equation Worksheet #1-10**
Week 6	Sunday, August 2	Saturday, August 8	**Complete two Delta Math** **Translating words to expressions worksheet #1-10**
Week 7	Sunday, August 9	Saturday, August 15	**Complete two Delta Math** **Writing equations worksheet #1-10**
Week 8	Saturday, August 16	Saturday, August 22	**Complete two Delta Math** **Complete solving and graphing inequalities worksheet #1-8**

Delta Math - login to your account or here is the link
https://www.deltamath.com/app/assignment/33194842

Helpful lessons, videos, and extra practice- Khan Academy

Rates and Percentages -
https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-fractions-decimals

Integers—Addition and Subtraction
https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-negative-numbers-add-and-subtract

Rational Numbers - Addition and subtraction
https://www.khanacademy.org/math/cc-seventh-grade-math/x6b17ba59:rational-numbers-addition-and-subtraction

Negative numbers - Multiplication and division
https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-negative-numbers-multiply-and-divide

Expressions, Equations, and Inequalities
https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-variables-expressions

Geometry
https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-geometry

Evaluating Expressions

When Evaluating ANY Expression:

1. **Substitute** each variable with its assigned value.
2. **Simplify** the expression using order of operations.

★ Be careful! When replacing a variable with a **negative value**, put **parentheses** around the value in the expression.

EXAMPLES:

Evaluate the expression 4xy, if x = -5 and y = -6.

4xy → 4(**-5**)(**-6**) → 180

Evaluate each expression.

1. Evaluate 3x when x = -6.	2. Evaluate -8x when x = -5.
3. Evaluate 0 ÷ y when y = -12.	4. Evaluate $\frac{x}{4}$ when x = -8.
5. Evaluate $\frac{-144}{y}$ when y = -12.	6. Evaluate -2(x + y) when x= -1 and y = 4.
7. Evaluate 3(y + x) when x = 6 and y = 1.	8. Evaluate (a + c) – b when a = 0.4, b = 3.5, and c = 15.61.
9. Evaluate c – d – a when a = 0.4, c =15.61, and d = 0.03.	10. Evaluate x + y when x = $\frac{3}{8}$ and y = $\frac{3}{4}$.

Percents

Setting Up:

1. Set up a **proportion** $\frac{\%}{100} = \frac{part(is)}{whole(of)}$
2. Labels must match vertically or horizontally.

Solve:

1. Solve by cross multiplying.

Sydney completed 3 out of her 5 skill sheets, what percent did she complete?

$$\frac{3completed}{5total} = \frac{\%completed}{100total}$$

Solve. Show All Work!

1. Express 30% as a fraction in simplest form.	2. Express $18\frac{4}{5}\%$ as a decimal.
3. If 125% of a number is 20, what is the number?	4. $33\frac{1}{3}\%$ of 150 is what number?
5. What percent of 52 is 6.24?	6. A bike that is originally $240 is on sale for 20% off. What is the sales price?
7. In your class, there are 8 girls and 14 boys. What percent of your class is girls?	8. 272 out of 320 students in your school were surveyed about their favorite soda. What percent of the school population was surveyed?
9. Diane's allowance is $20 per week. She saves 30% of her allowance. How much does she save each week?	10. Your Dad bought a concert ticket for $126. He said that you have to pay 75% of the cost of the ticket. How much did you have to give your Dad?

Adding/Subtracting Rational Numbers

When Adding/Subtracting ANY fraction:

1. Use GCF to get common denominators.
   - Add/Subtract numerators.
   - Denominators stay the same.
2. Add/subtract the whole numbers if needed.
   When subtracting, the largest absolute value goes on top
3. Reduce to lowest terms.
4. Use the sign of the number with the larger absolute value.

When Adding/Subtracting ANY numbers in decimal form:

1. Line up the place values.
2. Use zeros as place holders.
3. Integer rules apply.

EXAMPLES:

$\frac{-2}{3}+\frac{5}{9}=\frac{-6}{9}+\frac{5}{9}=\frac{-1}{9}$

$-2\frac{3}{5}-5\frac{4}{9}=-2\frac{27}{45}+-5\frac{20}{45}=-7\frac{47}{45}=-8\frac{2}{45}$

$$\begin{array}{r} 43.29 + 3.127 \\ 43.290 \\ +\ 3.127 \\ \hline 46.417 \end{array}$$

Find each sum or difference.

1. $8\frac{5}{12}-2\frac{7}{12}$	2. $\frac{14}{21}+\frac{-2}{7}$
3. $\frac{5}{8}-\frac{2}{3}$	4. $-1\frac{3}{4}+\frac{-3}{16}$
5. $\frac{4}{7}+\frac{-2}{7}$	6. $\frac{14}{25}+\frac{2}{5}$
7. 85.3 – 37.07	8. 27 + 5.19
9. -34.1 + (-17.63)	10. -18.21 – (-7.3)

Multiplying/Dividing Rational Numbers

When Multiplying ANY fractions:

1. Rewrite all numbers (whole numbers, mixed numbers, integers) as a fraction.
2. Reduce by simplifying a numerator with a denominator.
3. Multiply numerators. Multiply denominators.
4. Integer rules apply for the sign.

When Dividing ANY fractions:

1. Rewrite all numbers (whole numbers, mixed numbers, integers) as a fraction.
2. Change the division sign to multiplication and take the reciprocal of the fraction immediately **after** the division sign.
2. Reduce by simplifying a numerator with a denominator.
3. *Follow rules for multiplying fractions.*

When Multiplying ANY numbers:

1. Multiply the numbers.
2. Count how many total numbers **after** the decimal.
3. Put the decimal in so that there are the same amount of numbers after the decimal.
4. Integer rules apply for the sign.

When Dividing ANY numbers:

1. Move the decimal out of the divisor and then that many times in the dividend.
2. Use zeros as place holders.
3. Divide and bring decimal straight up in the quotient.
4. Integer rules apply for the sign.

EXAMPLES:

$\frac{1}{2} \bullet \frac{-2}{7} = \frac{-1}{7}$

$-1\frac{1}{9} \div \frac{2}{3} = \frac{-10}{9} \bullet \frac{3}{2} = \frac{-5}{3}$

$0.63 \div 0.9 = .9\overline{)}\,.63$ → $.7$, -63, 0

Find each product or quotient.

1. $-\frac{5}{6}\left(-\frac{2}{5}\right)$	2. $2\frac{5}{6} \bullet 3\frac{1}{3}$
3. $-10 \div \frac{3}{8}$	4. $\frac{-16}{7} \div \left(-\frac{12}{35}\right)$
5. 85(0.07)	6. **$-0.104 \div (-0.13)$**
7. $13.42 \div 67.1$	8. 2.001(0.05)

Multiplying/Dividing Integers

When Multiplying ANY Numbers:

1. **Multiply** or **divide** the absolute values of the numbers.
2. For the **sign of the product/quotient**, follow the rules below.
   - Positive x Positive = Positive
   - Negative x Negative = Positive
   - Positive x Negative = Negative
   - Negative x Positive = Negative

   Positive ÷ Positive = Positive
   Negative ÷ Negative = Positive
   Positive ÷ Negative = Negative
   Negative ÷ Positive = Negative
   - If there are an even number of negative integers being multiplied/divided, the product will be positive.
   - If there are an odd number of negative integers being multiplied, the product will be negative.

EXAMPLES:

2(8) = 16	-8 · 6 = -48	16 ÷ -8 = -2
-10 × -10 = 100	2(-5) = -10	$\frac{-28}{-4} = 7$

Find each product/quotient.

1. -8(6)	2. -10 · -10
3. -24 ÷8	4. $\frac{-21}{7}$
5. -14(-4)	6. -96 ÷ -4
7. $\frac{48}{16}$	8. -15 ÷ -15
9. 5(11)(-3)	10. 10(-8)(-2)

Two-Step Equations

To Solve Two–Step Equations:

1. **Isolate** the **variable** by using inverse operations
2. **Check** your solution by replacing the variable with the integer.

Examples:

$2x - 10 = 12$	$7x + 9 = -12$	$-3x + 4 = 19$	$\frac{x}{3} + 7 = 10$
$+10 \quad +10$	$-9 \quad -9$	$-4 \quad -4$	$-7 \quad -7$
$2x = 22$	$7x = -21$	$-3x = 15$	$\frac{x}{3} = 3$
$\div 2 \quad \div 2$	$\div 7 \quad \div 7$	$\div -3 \quad \div -3$	$\bullet 3 \quad \bullet 3$
$x = 11$	$x = -3$	$x = -5$	$x = 9$

Solve and check. Show all of your work.

1. $6m + 1 = -23$	2. $5 + 4d = 37$
3. $3 - 7y = -25$	4. $6 - 5b = -14$
5. $\frac{11}{12}e + 25 = 47$	6. $15 - \frac{1}{7}w = -3$
7. $8(x + 3) = 72$	8. $-7(z - 6) = -70$
9. $-0.6(r + 0.2) = 1.8$	10. $\frac{-2}{3}(w - \frac{4}{9}) = -\frac{4}{5}$

Translating Into Expressions

To Translate Sentences into Algebraic Expressions:

1. Identify the variable by telling what phrase the variable stands for in the sentence. (This could be the phrase "a number" or it could be the unknown information in the sentence).
2. Translate the sentence into related numbers, operations, and variable(s). Usually, the order of the translation will mimic the order of the sentence. (It is helpful to know what words and phrases represent the four main operations, addition, subtraction, multiplication, and division.)

EXAMPLES:

"**Seven less than some number**"
Let n = some number → **n – 7**

"**Thirteen** dollars **plus** the **cost of food**"
Let f = cost of food → **13 + f**

Identify the variable. Then, translate into an expression.

1. A number more than seven	2. The product of some number and six
3. Some number decreased by twelve	4. The quotient of ninety and a number
5. Eight less than some number	6. Twice the number
7. Half of some number	8. Seventeen more than a number
9. Brian is triple his nephew's age	10. Maria ran 4½ miles more than Amy

Writing Equations

To Write an Equation:

1. **Identify** a variable. Ex: Let x = the number
2. Look for **key words**: Ex decrease (-), increase (+), is (=)

Example:

A **number** increased by 6 is 24.
Let x = the number

$x + 6 = 24$

Five less than a **number** times three is -25
Let x = the number

$3x - 5 = -25$

Identify the variable. Translate into an equation.

1. Twice a number decreased by 7 is 19.	2. Six times a number increased by 8 Is -84.
3. Four minus one-fifth a number is -6.	4. Eight plus two-thirds a number is 12.
5. A company charges $2 for each balloon in an arrangement and a $3 delivery fee. You have $9 to spend. Write an equation for this situation.	6. It costs $7.50 to enter a petting zoo. Each cup of food to feed the animals is $2.50. If you have $12.50, how many cups can you buy?
7. Jamal and two cousins received the same amount of money to go to a movie. Each boy spent $15. Afterward, the boys had $30 altogether. How much money did each boy receive?	8. Mr. Singh had three sheets of stickers. He gave 20 stickers from each sheet to his students and has 12 total stickers left. How many stickers were originally on each sheet?

Solving and Graphing Inequalities

To solve and graph inequalities:

1. **Isolate** the variable by using inverse operations.
2. **Graph** the solution on the number line.
   - A closed circle is used when the point is included. ($\leq$, $\geq$)
   - An open circle is used when the point is not included. ($<$, $>$)

Example:

$$\begin{array}{r} X + 9 < 16 \\ -9 \quad -9 \\ \hline x < 7 \end{array}$$

Since x is less than 7, shade all values that are less than 7. Use an open circle.



Solve and graph each inequality:

1. $x - 4 < 10$	2. $x + 9 > 12$
3. $4x \leq 2.4$	4. $0.7x \geq 56$
5. $\frac{x}{4} \leq 8$	6. $\frac{x}{9} \geq 1.5$
7. $x - 7.3 > 24$	8. $x + 5\frac{2}{3} < 31$