

Monroe Township High School Monroe Township, New Jersey

Dynamics of ALGEBRA I – Resource Center SUMMER PREPARATION PACKET 2026-2027

Dynamics of Algebra I will provide you with the fundamental tools of algebraic understanding that will support you in all future advanced mathematics courses. The Algebra I Resource Center preparation packet contains review material of the concepts, skills, and procedures that should be mastered **BEFORE** entering Dynamics of Algebra I in the fall.

Additional online resources are available at:

- <http://www.khanacademy.org/>
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- <http://tinyurl.com/youtube-mthsAlgebra1>

This practice problem packet is the only formal review of the concepts, procedures, and skills that you will have before beginning your Algebra I course. Your teacher will expect you to have mastered all topics included here.

This collection of problems will identify those concepts that you have mastered as well as those you will need to practice and review. You are expected to seek extra help immediately on those concepts with which you have not demonstrated proficiency.

Be resourceful – use the online resources provided on the webpage! Problems here are very representative of the types of items you will need to have mastered before Dynamics of Algebra I so we strongly encourage that you include it in your summer festivities!

Evaluate each expression.

1) $10 - (x)^2 + y$ when $x = 1$ and $y = 4$

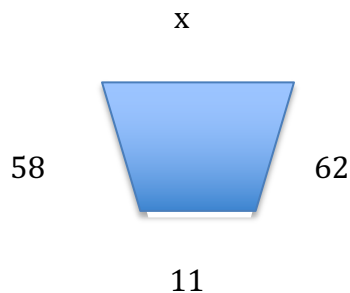
ANSWER: _____

2) $(a - b)^4$ when $a = 4$ and $b = 2$

ANSWER: _____

3) The perimeter of the figure below is equal to 150 cm.

Solve for x.



For #4 - 5, write the verbal phrase as an expression or equation. Use "x" for the variable.

4) "Twelve more than the product of eight and a number."

5) "The quotient of four and a number."

6) Write the numbers in increasing order: $9, -\frac{1}{2}, -5, -8.5, \frac{3}{2}, -1$

7) For $c - 7 < 3$, check $c = 5$ SOLUTION? (Yes or No): _____

8) Make an input-output table for the function. Use -2, -1, 0, 1, 2 as the input
 $y = 2x - 4$

INPUT	OUTPUT
-2	
-1	
0	
1	
2	

Simplify each expression.

9) $9 - (25 \div 5)$

ANSWER: _____

10) $-4 - 8$

ANSWER: _____

11) $30 - 40 \div 2$

ANSWER: _____

Solve each equation.

12) $2x = 12$

ANSWER: _____

13) $x + 5 = 13$

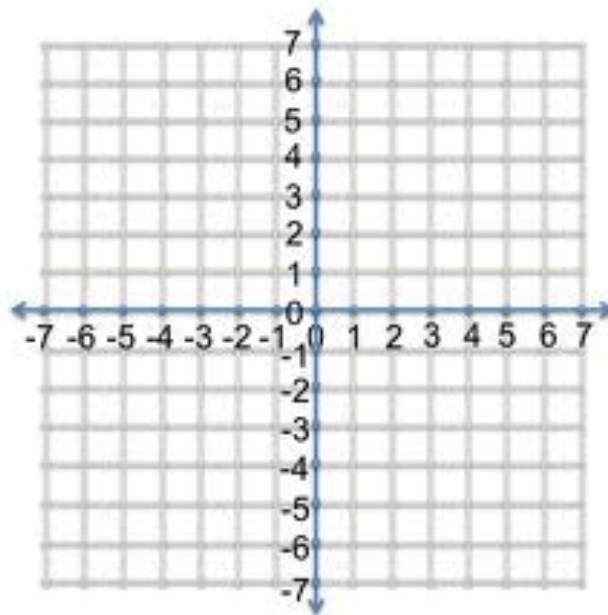
ANSWER: _____

16) $2x - 2 = 10$

ANSWER: _____

17.) Plot and label the following points:

A (5,2) B (2,6) C (3,-3) D (-7,4) E (-5,0) F (0,-6)



18) You are shopping for a mountain bike. A store sells two different models. The model that has steel wheel rims costs \$220. The model with aluminum wheel rims cost \$480. You have a summer job for 12 weeks. You save \$20 per week, which would allow you to buy the model with the steel wheel rims. You want to know how much more money you would have to save each week to be able to buy the model with the aluminum wheel rims.

a) Write an algebraic model for how much more money you would have to save each week.

b) Solve your model algebraically from part (a).

c) Explain what your solution represents.