

Name: \_\_\_\_\_  
 Algebra 1

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

## Unit 5: Systems of Equations and Inequalities Performance Tasks

*Instructions:* Choose one performance task. Write all your work on a separate clean piece of paper and attach it to this page.

**Big Idea: Solving Equations and Inequalities**  
 There are several ways to solve systems of equations and inequalities, including graphing and using equivalent forms of equations and inequalities within the system. The number of solutions depends on the type of system.

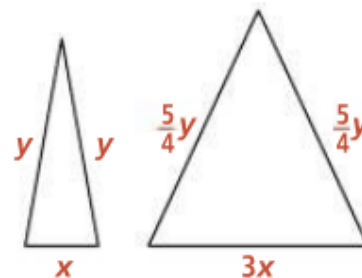
### Performance Task 1

Suppose two people began walking in the same direction at different average speeds. Walker A starts at the 0.5-meter mark and walks at a speed of 1 m/s. Walker B starts at the 2-meter mark and walks at a speed of 0.5 m/s. When and where will Walker A pass Walker B?

### Performance Task 2

*Solve. Show all your work and explain your steps.*

The triangle on the left has a perimeter of 14. The triangle on the right has a perimeter of 21. What are the values of  $x$  and  $y$ ?



**Big Idea: Modeling**  
 You can represent many real-world mathematical problems algebraically. When you need to find two unknowns, you may be able to write and solve a system of equations or inequalities.

### Performance Task 3

*Solve the problem. Show all your work and explain your steps.*

A town is organizing a Fourth of July parade. There will be two sizes of floats in the parade, as shown below. A space of 10 ft will be left after each float.



- Describe how the total length of the parade will be calculated.
- The parade must be at least 150 ft long, but less than 200ft long. What combinations of large and small floats are possible?
- Large floats cost \$600 to operate. Small floats cost \$300 to operate. The town has a budget of \$2500 to operate the floats. How does this change your answer to part (a)? What combinations of large and small floats are possible?

**Performance Task Assessment: Analytic Holistic Scoring****Developing Autonomy—The student**

3	Persevered to complete the problem without help
2	Completed most of the problem without help
1	Needed key hints to complete the problem
0	Needed extensive guidance to work the problem

**The Solution Process—The student's work showed**

3	A complete and appropriate solution process
2	An appropriate solution process that is almost complete
1	An appropriate process that is partially complete
0	An inappropriate process or no evidence of a process

**The Conclusion/Answer—The student's answer is an**

3	Accurate conclusion, supported by valid evidence and reasons, appropriate to this problem and context
2	Inaccurate but logical conclusion, supported by evidence and reasoning but incorrect due to a minor factual error (in details of problem, in computation, recall a formula, etc.) or minor mistake in reasoning
1	Inaccurate but logical conclusion that overlooks, or gets wrong significant facts (about the problem, the rule, computation, etc.)
0	Inappropriate conclusion: not supported by facts and logic, or there is no conclusion

**Teacher Comments:**