CCSS Algebra 2 – Assignment Name _____
Unit 2 – Block 2

1. A hot air balloon is 400 feet above the ground. Its pilot begins to lower the balloon at a constant rate of 50 feet per hour.

a. Fill in the table that shows the relationship between time, t, and the height of the balloon, h.

Time (in hours)	Height (in feet)
0	
1	
2	

b. Write a function rule that models the this relation.

c. Use this function rule to determine the balloons altitude (height) 7.5 hours. Show your methods.

d. Use the function rule to determine how much time must pass for this balloon to be 160 feet above the ground. Show your methods.

2. Complete the table to show the inverse relation.

h (hours)	c (cost)
0	100
1	120
2	140
3	160
4	180

c (cost)	h (hours)
100	0

a. Can the inverse relation, where c is the independent variable and h is the dependent variable, be modeled by a linear function? Explain.

b. Write a function rule that expresses c in terms of h.

3. Graph the original function rule, c = 100 + 20h, and its inverse, $h = \frac{1}{20}c - 5$.

4. How does the graph of the inverse compare to the graph of the original relationship in which costs depends on the number of hours of production?

5. Rewrite the function c = 150 + 25h by solving for h in terms of c. Show your steps.

6. If "a = 0.5 b", then write the function that represents b in terms of a. Show your steps.