**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Module 7 Study Guide**

|  |
| --- |
| For problems #1-2, find the slope and distance between the given points. Simplify all radicals if possible.  |
| 1. (15, 9), (-7, -27)
 | 1. (-10, 2), (5, -7)
 |
| 1. Write the definition of the following quadrilaterals.

Parallelogram: Rectangle: Rhombus: Square:  |
| 1. Show that quadrilateral A(-5, -4), B(1, -2), C(2, 3) and D(-4, 1) is a parallelogram.

 | 1. Show that quadrilateral A(-1, -3), B(4, 2), C(3, 9) and D(-2, 4) is a rhombus.

 |
| 1. Show that A(-4, -1), B(-2, 7), and C(1, 2) are the vertices of an isosceles right triangle.

 | 1. Find the perimeter of the following shape.

 |
| 1.

 |
| 1.

 |
| 1. The function to the left is . Write the equation for the following translations, and then graph the new function
	1. Shift up 3,
	2. Shift to the left 5,
	3. Shift down 2 and to the right 7,

  | Image result for cubic function |
| 1. The function to the right is g(x). Graph the following functions.
	1. h(x)=g(x+2)
	2. j(x)=g(x)-4
	3. k(x)=g(x-1)-3
 | Image result for function translations worksheet |
| 1. The original function has been shifted and reflected to create 3 new graphs. Label and write the equation of the each new graph.
 |  |
| 1. Given the graph to the right:

|  |  |
| --- | --- |
| Translation Form: |  |
| Slope-Intercept: |  |

 |  |
| 1. Given the following functions:

|  |  |  |  |
| --- | --- | --- | --- |
| Translation Form: |  | Slope-Intercept: |  |

 |
| 1. Angela and Kristen are comparing how much sleep they get each week. They realize they sleep the same amount each weekday, but sleep different amount over the weekend. Angela says I get 8 hours of sleep each weekday, and I sleep for 20 hours over the weekend. Kristen says she gets 24 hours over the weekend.
	1. Write explicit functions in slope-intercept form to represent Angela’s and Kristen’s hours of sleep.

 * 1. Is there a vertical translation between the two explicit functions? If yes, write one explicit function as a translation of the other. If no, explain why not.
 |
| 1. On a sunny day in San Diego a tortious and a hare decide to race. The hare is so confident, that it allows the tortious to start 5 minutes before him. What the hare doesn’t know is that the tortious has been training, and now runs at the same pace. If both creatures run at a pace of 2 meters per second, graph their distance vs. time below.
 |
| a. Image result for distance vs time graph blank | b. Write explicit functions, in slope intercept or point slope form, to represent each animal.  c. Is there a vertical or horizontal translation between the two explicit functions? Write one explicit function as a translation of the other.  |