Student Worksheet

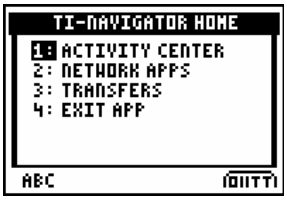
Problem

Are the two sides of the pyramid perpendicular?

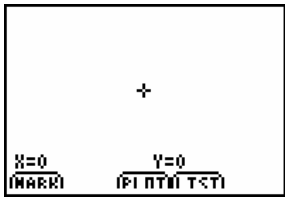
Activity

1. Log in to the Navigator:
   - Press [APPS] key.
   - Scroll down to the ***NavNet*** application.
   - Press the [ENTER] key.
   - Your teacher will provide you with a username and password.

2. Select ***Activity Center*** and wait for your teacher.

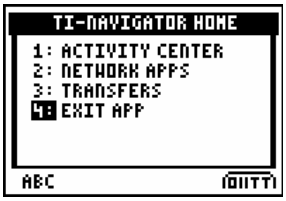


3. When the following screen appears, move the cursor using the arrow keys and press the [Y=] key to ***mark*** one or two points that lie on the left side of the pyramid.

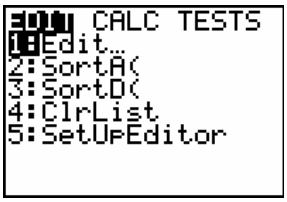


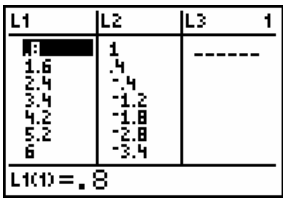
4. Your teacher will send you L1 and L2 that contains all of the points contributed by all students.

5. Press the ZOOM key to go ***back*** and select ***Exit App*** to exit Navigator.



6. Press the STAT key and then select ***Edit…*** to access the lists of data, L1 and L2.





7. Select 2 ordered pairs (points) from the lists and write them in the table. L1 has the x-values and L2 has the y-values of the points.

	x-value	y-value
first		
second		

8. Use the table values and the slope formula to find the slope (m) of the left side of the pyramid. Press 2nd MODE to quit to the home screen.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\quad - \quad}{\quad - \quad} = \frac{\quad}{\quad} = \boxed{\quad}$$

9. Discuss and agree upon a common slope with your group or class.

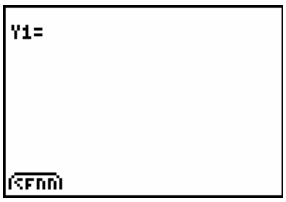
$$m = \boxed{\quad}$$

10. Find the equation of the line using the slope intercept form. Use the class slope (m) and select a number between -10 and 10 for the y-intercept (b).

$$y = mx + b = \_\_\_\_\_ x + \_\_\_\_\_$$

11. Log in to the Navigator and select ***Activity Center***, again. You won't have to type in your username or password.

12. Type in and press the [Y=] key to send your equation to the teacher.



13. Resend your equation so that your line lies directly on the left side of the pyramid.

14. Find the slope of a line perpendicular to the class slope.
    Press [2nd][MODE] and select ***Exit App*** to exit Navigator.

$$perpendicular\ slope = m = \square$$

15. Find the equation of the line perpendicular to yours using the slope intercept form. Use the perpendicular slope you found and select a number between -10 and 10 for the y-intercept.

$$y = mx + b = \_\_\_\_\_\ x + \_\_\_\_\_$$

16. Log in to the Navigator and select ***Activity Center***, again. You won't have to type in your username or password.

17. Type in and send your equation for the perpendicular line. Resend your equation so that your line lies directly on the right side of the pyramid.

Questions

Are the sides of the pyramid perpendicular? _____

How do you know? Explain and justify your conclusion.