

Height at the 50

Write a complete solution including words that explain your process, mathematics to support your conclusions, and diagrams where appropriate. A person who have never seen this problem should be able to read and follow your work.

Take a long rope, tie it to the bottom of the goal post at one end of a football field. Then run it across the length of the field (120 yards) to a goal post at the other end. Stretch it tight, and then tie it to the bottom of that goal post, so that it lies flat against the ground.

Now suppose that I add just 1 foot of slack to the rope. How high can I lift it up at the 50-yard line?

How high can I lift it if I add 2 feet of slack to the rope?

Complete the table where x is the distance the amount of slack added to the string and h is the height above the 50-yard line.

x	h
1	
2	
3	
4	
5	

Create a graph of the data. Is the relationship between x and h linear, quadratic, or neither?

Write an equation solved for h in terms of x .

Use your equation to verify two of the ordered pairs in your table.

Does your equation support your conclusion about the relationship between x and y ? Explain.