

LINEAR FUNCTIONS

PROBLEM 3: WALK BY EQUATION

Using the MOTION program on your calculator, select “WALK BY EQUATION,” and choose linear equations. In this program, x represents the number of seconds you have been walking and y represents your distance from the motion detector. Try this several times. Then discuss the specific effects A and B have on the equation in the form $y = Ax + B$.

PROBLEM 4: A CIRCULAR RELATIONSHIP

Find at least five circles of various sizes. For each circle, measure the maximum distance across the circle and the distance around the circle.

- A. First, investigate discrepancies in the measures within your group and determine a reasonable method of arriving at measures that are as accurate as possible.
- B. Then, explore the relationship between the two variables and determine an appropriate mathematical model. Include a scatterplot and a regression equation.
- C. Interpret your regression equation in your analysis, paying special attention to the meaning of the slope and the y -intercept.
- D. Have you seen a formula similar to this somewhere? If so, where?
- E. For what domain do you believe your model is appropriate?
- F. Based on your interpretation of the model, answer the following question.
Assume the distance around the equator is 25,000 miles. How many extra miles does an airplane fly on a trip around the equator if it flies at an altitude of 10 miles?