56. SPORTS An athlete is running a 200 meter dash. Write and graph an equation that relates the athlete's average running speed r (in meters per second) and the time t (in seconds) that the athlete will take to finish the race. Is the equation an inverse variation equation? *Explain*.

57. MULTI-STEP PROBLEM The table shows the vibration frequencies f (in hertz) for various lengths ℓ (in centimeters) of strings on a stringed instrument.

Length of string, ℓ (cm)	42.1	37.5	33.4	31.5
Frequency, f (Hz)	523	587	659	698

a. Decide Tell whether an inverse variation equation can be used to model the data. If so, write and graph the inverse variation equation.

b. Calculate Find the frequency of a string with a length of 29.4 centimeters.

c. Describe *Describe* the change in the frequency as the length of the string decreases. Does your answer in part (b) support your description?

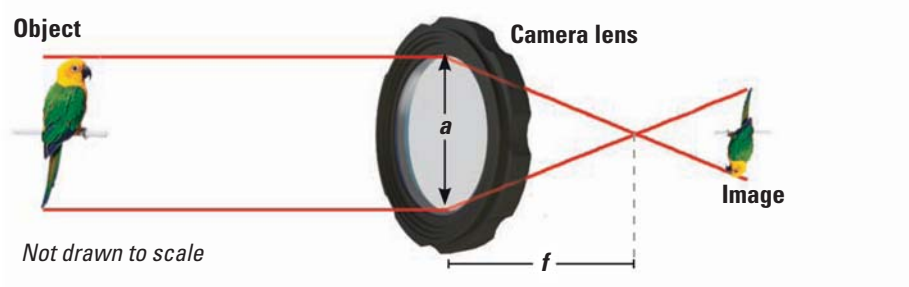
58. MULTIPLE REPRESENTATIONS You plan to save the same amount of money each month to pay for a summer sports camp that costs $1200.

a. Making a Table Let a represent the amount (in dollars) that you plan to save each month. Make a table that shows the number m of months that you need to save money for the following values of a: 75, 100, 120, 150, 200, and 240. *Describe* how the number of months changes as the amount of money that you save each month increases.

b. Drawing a Graph Use the values in the table to draw a graph of the situation. Does the graph suggest a situation that represents *direct variation* or *inverse variation*? *Explain* your choice.

c. Writing an Equation Write the equation that relates a and m.

59. TAKS REASONING As shown in the diagram, the focal length of a camera lens is the distance between the lens and the point at which light rays meet after passing through the aperture, or opening, in the lens. The f-stop s is the ratio of the focal length f (in millimeters) to the diameter a (in millimeters) of the aperture.



a. Model A photographer has a camera with a focal length of 35 millimeters. Write and graph an equation that relates a and s. Tell whether the equation represents inverse variation.

b. Compare The greater the diameter of the aperture, the more light that passes through the aperture. For the camera in part (a), does more light pass through the aperture when the f-stop is 4 or when the f-stop is 8? *Explain*.