

PRE-AP ALGEBRA 2

1A.8 CLASSWORK

For each of the situations 1 through 3 below:

- State whether the correct model is linear, quadratic, or exponential.
- Write the equation for the situation using the indicated variables.

- Bob, who has a good arm, throws a baseball upward from ground level with an initial upward velocity of 70 ft/sec.

y \equiv height of the baseball in feet

t \equiv time in seconds

Model is quadratic \leftarrow

$$y = y_0 + v_0 t - \frac{1}{2} g t^2, \quad y_0 = 0$$

$$y_0 = 0, \quad v_0 = 70, \quad g = 32.2 \Rightarrow$$

$$y = 70t - 16.1t^2 \leftarrow$$

- For babysitting, Suzie makes \$12.50 the first hour and \$10.00 per hour for subsequent hours.

e \equiv money earned

h \equiv hours

Model is linear \leftarrow

$$e = 12.50 + 10(h - 1)$$

$$= 12.5 + 10h - 10$$

$$e = 10h + 2.5 \leftarrow$$

- Frank deposits \$400 into a savings account which earns 5% APR.

m \equiv amount of money in the bank

y \equiv time in years

Model is exponential \leftarrow

$$m = 400(1.05)^y \leftarrow$$