TRS 92: Finding and Interpreting Intercepts

Refer back to Day 25 Homework.

1. You are considering taking a job where the salary is modeled by the equation
    $S(t) = 1250.5t + 9253.7$. S represents the salary in dollars and t represents the time in
    years since hiring.

    a. Completely define the independent variable.

    b. Completely define the dependent variable.

    c. What is the slope of the equation? Interpret this value in the context of the problem.

    d. What is the vertical intercept of the equation? Interpret this in the context of the
        problem.

    e. Find the horizontal intercept. Show your work.

    f. Interpret **part e** in the context of the problem.

    g. Does the horizontal intercept found in **part e** make sense in the context of the problem?
        Explain.

2. A student is watching the snow on her porch melt over time, which can be modeled by the equation $A(t) = 33.36 - 1.2t$. Let t be the time in days that she has been watching, the independent variable, and let A be the amount of snow left in inches, the dependent variable.

    a. What is the vertical intercept? Interpret this in the context of the problem.

    b. What is the slope? Interpret this value in the context of the problem.

    c. Determine the horizontal intercept. Show your work.

    d. Interpret **part c** in the context of the problem.

3. A museum worker is in charge of counting the number of pamphlets available to the tourists. Let A, the dependent variable, be the amount of pamphlets left in the holder and let t, the independent variable, be the time in hours that have passed since the museum opened.

    a. Interpret the coordinates $(0, 75)$ in the context of the problem.

    b. Interpret the coordinate $(7.5, 0)$ in the context of the problem.

    c. Interpret a slope of -10 in the context of the problem.

4. The number of dogs in an animal shelter can be modeled by the equation $D(t) = -20t + 400$. Let t represent the time in weeks and let D represent the number of dogs in the shelter.

   a. Evaluate $D(4)$. Show your work.

   b. Interpret **part a** in the context of the problem.

   c. Solve $D(t) = 150$. Show your work.

   d. Interpret **part c** in the context of the problem.

Complete MML: Functions and Intercepts