

Name: _____

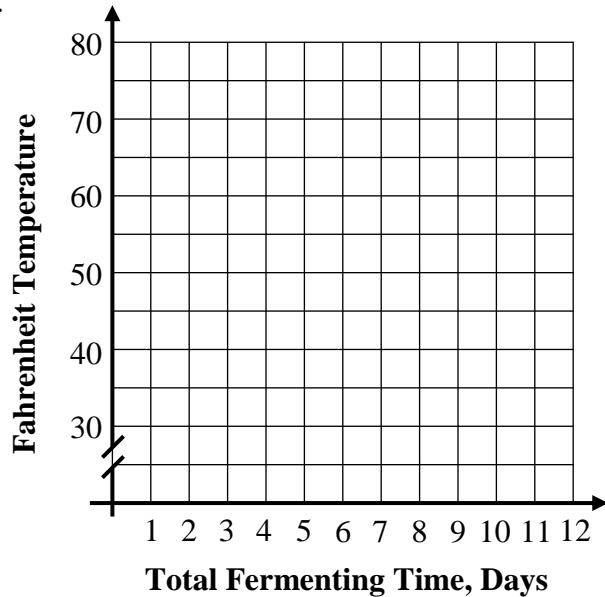
Date: _____

1-4 STEP FUNCTIONS HW

1. When kimchi is made, it is initially fermented for the first 3 days at a temperature of 70 degrees Fahrenheit and then immediately moved to a temperature of 50 degrees Fahrenheit for another 3 days after which it is put in a 35 degree refrigerator for 6 days.

The Fahrenheit temperature, F , of the kimchi can be modeled over time, t , in days with the equation below. Graph the kimchi's temperature on the grid provided.

$$F(t) = \begin{cases} 70 & 0 \leq t < 3 \\ 50 & 3 \leq t < 6 \\ 35 & 6 \leq t \leq 12 \end{cases}$$



2. Stewart International Airport in Newburgh, New York charges for parking the way many airports do, by the partial hour. Their short-term parking rates are shown below.

(a) Explain why the total amount you will pay for parking at Stewart is a step function based on the number of hours you've parked?

Stewart International Airport Rates & Information

Parking Lots and Rates at SWF Airport (including tax)

Stewart On-Airport Short-Term Lot

1 hr or part thereof	\$3
Each additional hour or part thereafter*	\$3
24-hr maximum	\$30

*charges are incurred in hour increments before reaching the daily maximum

(b) How much would you have to pay if you parked for 5 hours and 22 minutes? Show how you determined your answer.

(c) After how many hours of parking will you hit the maximum charge of \$30? Explain your reasoning.