PROBLEM-OF-THE-DAY: ALGEBRA 1

WEEK: October 2 to October 5 **DAY:** Friday

RISD Objective: Provided the equation of a function, students will evaluate the function for a particular value of x. Or students will determine the value of x if given the function value.

PROBLEM #33

A hot air balloon is currently at 72 ft. above the ground and is rising at a rate of 18 ft. per minute.

a) Write a function, h(m), which describes the height of the balloon in a given number of minutes, *m*.

b) Use this function to determine the height of the balloon in 20 minutes.

c) How many minutes will it take the balloon to reach a height of 1000 feet (round to the nearest minute)?

MODEL SOLUTION #33

a) h(m) = 18m + 72

b) Since the height function is h(m) = 18m + 72, to find the height after 20 minutes, I need to substitute 20 in for m.

h(20) = 18(20) + 72
= 360 + 72
= 432

So, the balloon will be 432 feet high in 20 minutes.

c) In this case we know the height, which is 1000 ft., so we will substitute this in for the function and solve for m.

1000 = 18m + 72

928 = 18m

928/18 = m

51.6 = m

So, the balloon will be 1000 ft. high in 52 minutes.