Activity 3:

This activity is about techniques to check your answers. There are saboteurs among us. Can you find them? First, work this problem, keep your work private!

Directions: Choose two of the first three problems to solve.

A) *Heads or Tails?* A quarter is tossed from a height of 80 ft with an upward velocity of 64 ft/sec. How long until the quarter hits the ground?

Step 1) Read the problem. Draw a diagram. Underline the quantity you are trying to find and circle the quantities you think you will need.

Step 2) Assign a variable for the unknown and specify units.

Step 3) Write an equation.

Step 4) Solve your equation.

Step 5) Write the solution with units. Is it reasonable?

Step 6) Check your solution in the words of the original problem.

B) *Cast a long shadow.* A sign post casts a shadow on the ground. The length of the shadow is 2 more than twice the height of the post. The distance from the top of the post to the top of the shadow is 1 more than the length of the shadow. How tall is the post?

Step 1) Read the problem. Draw a diagram. Underline the quantity you are trying to find and circle the quantities you think you will need.

Step 2) Assign a variable for the unknown and specify units.

Step 3) Write an equation.

Step 4) Solve your equation.

Step 5) Write the solution with units. Is it reasonable?

Step 6) Check your solution in the words of the original problem.

C) *Sniff out the truth.* A nosework trial has two judges. One judge has an easier course and can complete a dog 60 seconds faster than the other judge. Both judges working together can do 50 dogs per hour. How long does each judge take to complete one dog?

Step 1) Read the problem. Draw a diagram. Underline the quantity you are trying to find and circle the quantities you think you will need.

Step 2) Assign a variable for the unknown and specify units.

Step 3) Write an equation.

Step 4) Solve your equation.

Step 5) Write the solution with units. Is it reasonable?

Step 6) Check your solution in the words of the original problem.

D) *Watch your head.* An apple seed is spit from a height of 5 feet with an upward velocity of 11 ft/sec. How long until the seed hits the ground?

Read the problem and decide which of the following answers is incorrect.

Answer 1: $t = 1$ second

Answer 2: $t = -1$ second

E) *Piece it together.* A 24 foot power pole breaks in a wind storm. Part of the pole is still standing, but the top has fallen to form a triangle. The distance along the ground from the (broken) top of the pole to the base of the pole is 3 feet longer than the portion still standing. How long is the portion still standing?

Read the problem and decide which of the following answers is incorrect.

Answer 1: $h = 9$

Answer 2: $h = 9$ feet

F) *Snow shovel shenanigans.* Two kids are shoveling driveways. One can shovel a driveway three minutes faster than the other. Working together they can shovel 9 driveways per hour. How long does each kid take to shovel a driveway?

Read the problem and decide which of the following answers is incorrect.

Answer 1: $t = 15$ minutes

Answer 2: $t = \frac{4}{3}$ minutes