

Homework - Tracing Practice Sample Solutions

1)

Scratch	Variables
$hyp = (a^2 + b^2)^{\frac{1}{2}} \rightarrow (9 + 16)^{\frac{1}{2}} \rightarrow 5$	$a: float = 3$ $b: float = 4$ $hyp: float = 5.0$
<u>Printed Output</u> The hypotenuse is 5.0	

Notice that hyp gets added to the variable list once it is defined.

Also, printed output doesn't have "quotes".

2

Scratch	Variables
$a_2 = a_1 + 9 \rightarrow 3 + 9 \rightarrow 12$	$a_1: int = 3 \rightarrow 5$
$a_3 = a_1 + a_2 \rightarrow 3 + 12 \rightarrow 15$	$a_2: int = 12 \rightarrow 13$
$a_2 = a_1 + a_3 - 5 \rightarrow 3 + 15 - 5 \rightarrow 13$	$a_3: int = 15 \rightarrow 22$
$a_1 = a_1 + 1 \rightarrow 4$	
$a_3 = a_2 * 2 - a_1 \rightarrow 13 * 2 - 4 \rightarrow 26 - 4 \rightarrow 22$	
$a_1 = a_1 + 1 \rightarrow 4 + 1 \rightarrow 5$	
<u>Printed Output</u> 5 → 35	

Notice that we update/cross out variables when they change. Each time they are called in scratch, the variable column contains their current value!

3.

Scratch	Variables
$pizza = "zebra" + fish \rightarrow "zebrafish"$	$zebra: str = "fish"$
	$fish: str = "food"$
	$food: str = "pizza"$
	$zebra: str = "zebrafood"$
<u>Printed Output</u> food = pizza zebrafood pizza fish zebra 75 + 2	

The quotes on the string variables do matter

Note: I will generally not look at your scratch unless something has gone wrong. If you can do something has some in your head, feel free to do so.