UC Berkeley's CS10 Fall 2018 Quest – Instructor Dan Garcia

Your Name (first last) _____ *SID* _____ *Lab TA's Name* _____

← *Name of person on left (or aisle)* _____ *Name of person on right (or aisle)* → _____

What's that Smell? Oh, it's Potpourri! (2 pts for 1-6, we drop lowest one)

Fill in the correct circles & squares completely…like this: ● (select ONE) ■ (select ALL that apply)

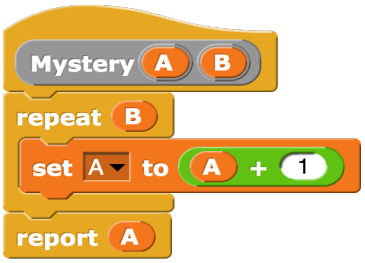
Question 1: Which of the following is a **true** statement regarding Abstraction? (select ONE)

- ○ *Computer Scientists* are better than domain experts at deciding what details to remove.
- ○ Abstractions are *always beneficial*, since they remove detail and allow users to focus on what's important.
- ○ *Generalization* allows people to ignore the details of the implementation.
- ○ An *abstraction barrier* allows us to use something without needing to know how it is built.

Question 2: What is $11_{16} - 11_2$? (select ONE)

○ 11_{14}	○ 11_{10}	○ 12_{10}	○ 13_{10}	○ 14_{10}	○ 15_{10}

Question 3: What does **`Mystery`** report, if **`B`** is a non-negative integer (i.e., 0, 1, 2, …)? (select ONE)

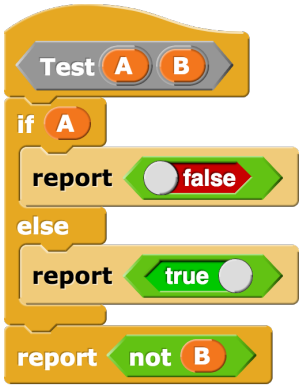


○ **`A–B`**	○ **`B–A`**	○ **`A+B`**	○ **`A×B`**	○ A^B	○ B^A	○ The sum of all the numbers from **`A`** to **`B`**	○ Error	○ Infinite Loop

Question 4: What is your guess as to the *Domain* and *Range* of **`Foo`**? The expression does not cause an error. (select ALL that apply)

The Domain of `Foo` is…					**The Range of `Foo` is…**				
☐ numbers	☐ words	☐ sentences	☐ Booleans	☐ lists	☐ numbers	☐ words	☐ sentences	☐ Booleans	☐ lists

(The block on the right is used for Questions 5 & 6) SID _____



Question 5: If **A** and **B** are Booleans, and the output from **Test** is true, which can you say *for sure*? (select ALL that apply)

☐ **A** must be true	☐ **B** must be true	☐ **A** must be false	☐ **B** must be false	☐ None of these

Question 6: Which of the following is the same as the original **Test** block? (select ONE)

○ 

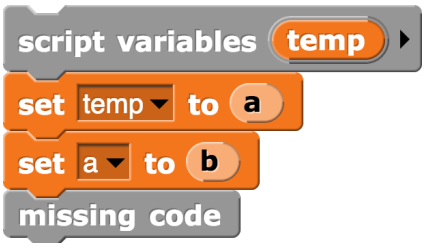
○ 

○ 

○ 

○ None of these

Question 7: ***Down at the swap meet…*** (3 pts)
This script is intended to exchange the values of the variables **a** and **b** using the temporary variable **temp**.



Which of the following can be used to replace 

so the script works as intended? (select ONE)

○ 	○ 	○ 	○ 

Question 8: *Beethoven was a good composer…* (4 pts)
If we were given three functions:

$$\texttt{F(x)} = x^2$$
$$\texttt{G(x)} = x - 7$$
$$\texttt{H(x)} = x + 5$$

…and you wanted to calculate:

$$(x - 7)^2 + 5$$

…how would you compose the three functions to get that? (select ONE)

○	○	○	○	○	○
`F(G(H(x)))`	`F(H(G(x)))`	`G(F(H(x)))`	`G(H(F(x)))`	`H(F(G(x)))`	`H(G(F(x)))`

Question 9: *Dōm(ain), Dōm(ain) and the Range* (8 pts)

We want to compute the following cascade of **`map`** with mapping function **`M()`** and **`keep`** with predicate **`P()`**:

…but someone "glues" the **`map`** and **`keep`** together in the wrong order! Let's try to change the inputs to **`map`** and **`keep`** to make it work. Which works, which can potentially cause a domain/range error, and which doesn't cause an error but is probably a wrong answer? (select ONE per row)

	Works!	Possible Domain & Range error	No Domain & Range error, but is probably a wrong answer
	○	○	○
	○	○	○
	○	○	○
	○	○	○

You did it!! Congratulations!! Here's a fun comic…