Homework

Selection – Tracing, Nested if and more practice

Your solution to exercises 2, 3 and 4 should include nested-if blocks.

1. **Pass.java** Make a new version of your Pass.java program from exercise set 11_Selection. This time, your program will use random numbers to form the question. Make sure your program prints out the question so that the user can correctly answer it.

2. **SortThreeNumbers.java** Write a program that prompts for three positive, whole numbers. If all inputs are valid (no zero or negative values), output the three numbers in ascending order, otherwise, output an error message.

3. **Stages.java** Write a program that prompts user for an age. For an age over 18, `adult` is displayed. For an age less than or equal to 18, `toddler` is displayed when the age is less than or equal to 5, `child` when the age is less than or equal to 10, `preteen` when the age is less than or equal to 12, and `teen` when the age is over 12.

4. **Delivery.java** Jackson Delivery Service charges based on the weight of the package.

Up to 5 kg	$3.00 per kg
Over 5 to12 kg	$3.50 per kg
Over 12 to 20 kg	$4.00 per kg
Over 20 to 27 kg	$4.50 per kg

   The company does not accept packages over 27 kilograms or large than 0.1 cubic meters (100,000 cubic centimeters). Write a program that prompts the user for the weight of a package and its dimensions (length, width, and height), and then displays an appropriate error message (too heavy, too large) or the price to deliver the package.

5. Attempt to do this question, but don't spend too much time if it does not work, but I want you to see WHY it does not work. (Try putting your boolean test inside a print statement and see what value it gives you. Does it ever work properly?)
   Capital.java Ask the user to enter the capital of Canada. Tell them if they are correct or not.

   Answer the following questions in your written document:
   What happens when you run this program? Does it ever work properly?
   Tell me what happens when you run your program.

Doesn’t work properly with if-statements, even if answer is exactly the same as the comparator.

EXERCISE 5 ON NEXT PAGE

6. Trace the following programs:

Program	Memory	Output

`int num1 = 10;`
`int num2 = 15;`
 	
`if (num1 == 10) {`
`  num2 = 20;`
`} else if (num2 = 20) {`
`  num1 = 15;`
`  System.out.println("ElseIf");`
`}`
 	
`if (num2 == 20) {`
`  System.out.println("Haha");`
`} else {`
`  System.out.println("LOL");`
`}`
	num1(int): ~~10~~ 15
	num2(int): ~~15~~ 20
		ElseIf
		Haha
		>

`char ch = 'z';`
`int a = 1;`
`int b = 2;`
`if (ch > 'Z') {`
`  a = a + 1;`
`} else {`
`  a = a + 2`
`}`
`if (ch < 'Z') {`
`  b = b * 2;`
`} else if (ch == 'Z') {`
`  b = b * b;`
`}`
`System.out.print(a);`
`System.out.println(b);`
	ch(char): z
	a(int): ~~1~~ 2
	b(int): 2
		22
		>

`boolean check = false;`
`if (check) {`
`  System.out.println("line 1");`
`} else {`
`  System.out.println("line 2");`
`}`
`if (check != true) {`
`  System.out.println("line 3");`
`}`
	check(bool): false	line 3
		>