Name _____
Date _____

AP Computer Science A
Unit 3 Lab

Directions: Each of the three programs should be written in its own main program.

Part 1:
Julio Cesar Chavez Mark VII is an interplanetary space boxer, who currently holds the championship belts for various weight categories on many different planets within our solar system. However, it is often difficult for him to recall what his "target weight" needs to be on Earth in order to make the weight class on other planets. Write a program to help him keep track of this.

It should (1) ask him what his earth weight is, and (2) ask him to enter a number for the planet he wants to fight on. It should then compute his weight on the destination planet based on the table below:

#	Planet	Relative Gravity
1	Venus	0.78
2	Mars	0.39
3	Jupiter	2.65
4	Saturn	1.17
5	Uranus	1.05
6	Neptune	1.23

For example, if Julio weighs 128 pounds on Earth, then he would weight just under 50 pounds on Mars, since Mars' gravity is 0.39 times Earth's gravity. (129*0.39 is 49.92).

Sample Output:

Please enter your current Earth weight: **128**

I have information for the following planets:
1. Venus 2. Mars 3. Jupiter
4. Saturn 5. Uranus 6. Neptune

Which planet are you visiting? **2**

Your weight would be 49.92 pounds on that planet.

Part 2:
Write an interactive quiz. It should ask the user three multiple-choice or true/false questions about something (anything that is school appropriate). It must keep track of how many they get wrong and print out a score (out of 3) at the end.

Sample Output:

Are you ready for a quiz? **N**
Okay, here it comes!

Q1. What is the capital of Alaska?
1) Melbourne
2) Anchorage
3) Juneau

> 3

That's right!

Q2. Can you store the value "cat" in a variable of type int?
1) yes
2) no

> 1

Sorry, "cat" is a string. ints can only store numbers.

Q3. What is the result of 9+6/3?
1) 5
2) 11
3) 15/3

> 2

That's correct!

Overall, you got 2 out of 3 correct.
Thanks for playing!

Part 3:
Cindy Lou Who is extremely excited about Christmas – even though it is still October! Write a program that displays the lyrics to the song, "The Twelve Days of Christmas." (Please feel free to copy and paste lyrics from Google, but make sure to format accordingly to obtain the necessary output.)

In your program, you should prompt the user for the number of days to sing.
The output will be the verse for the given number of days to sing. For example, if the user inputs 9, the output should be:

On the ninth* day of Christmas, my true love gave to me
Nine lords a-leapin',
eight maids a-milkin',
seven swans a-swimmin',
Six geese a-layin',
five golden rings,
four calling birds,
three French hens,
Two turtle doves and
a partridge in a pear tree.

Use a switch statement to count down from the current day to the first day, listing the gifts received. (Hint: Take advantage of the fall-through feature of switch. See page 160 and refer to Exercise 22 on page 175.)

*Use a separate switch statement to put the appropriate suffix on the day number (1st, 2nd, 3rd, etc.).

Rubric

	3	2	1	0
1: Input	Program allows proper input from user – pounds and a value associated to planet.	Program allows for input from user but does not get the correct input type for one of the two values.	Program allows for input from user but does not get the correct input type for either of the two values.	Program does not allow for user input.
1: If-else Statements	If-else statements correctly account for the various gravity factors and calculations.	If-else statements account for the various gravity factors and calculations but have 1-2 errors.	If-else statements account for the various gravity factors and calculations but have 3-4 errors.	If-else statements account for the various gravity factors and calculations but have 5 or more errors.
1: Output	Program prints accurate and concise information about converted weight.	Program prints accurate information with incorrect context.	Program prints accurate information with no context.	Program does not print information about converted weight.
2: Questions	Program includes 3 questions with multiple choice or true/false responses.	Program includes 2 questions with multiple choice or true/false responses.	Program includes 1 question with multiple choice or true/false responses.	Program does not have any multiple choice or true/false questions.
2: Outputs for each question	Program provides correct responses for each questions' answer choices.	Program provides correct responses for each questions' answer choices but there are 1-2 errors.	Program provides correct responses for each questions' answer choices but there are 3-4 errors.	Program provides correct responses for each questions' answer choices but there are 5 or more errors.
2: Score Tallies	Program correctly tallies and prints the score.	Program incorrectly tallies the score but prints it out properly.	Program incorrectly tallies and prints out the score.	Program does not tally or print out the score.
3: Input	Program correctly asks for user input.	Program asks for user input incorrectly.	N/A	Program does not ask for user input.
3: Switch for day number	Program uses switch statement correctly to print the day number in the first line of each stanza.	Program uses switch statement correctly to print the day number in the first line of each stanza but output is not formatted correctly.	Program uses switch statement to print the day number in the first line of each stanza but there are errors in the switch statement.	Program does not use switch statement to print the day number in the first line of the lyrics.
3: Switch for lyrics	Program uses switch statement correctly to print the lyrics.	Program uses switch statement correctly to print the lyrics but output is not formatted correctly.	Program uses switch statement to print the lyrics but there are errors in the switch statement.	Program does not use switch statement to print the lyrics.
Style	Classes follow Java style guidelines and include appropriate variable names, comments, etc.	Classes follow Java style guidelines and include 1-2 questionable variable names, comments, etc.	Classes follow Java style guidelines and include multiple questionable variable names, comments, etc.	Classes are missing comments and/or have inappropriate variable names.