Assumption University

Vincent Mary School of Science and Technology

Quiz#2

Semester 2/2021

Subject:	CSX3002 / ITX2001 Object-Oriented Concepts and Programming IT2371 Object-Oriented Programming I
Section:	541,542
Date:	22 Feb 2022 (13:30 – 15:00)
Time:	(1.5 hours)
Lecturer:	A. Pawut Satitsuksanoh and A. Kiratijuta Bhumichitr

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Instructions:

1. The examination is the online open-book exam via MS Teams.
2. There are 3 questions in this exam.

Question 1	15 points
Question 2	5 points
Question 3	10 points
Total	30 points

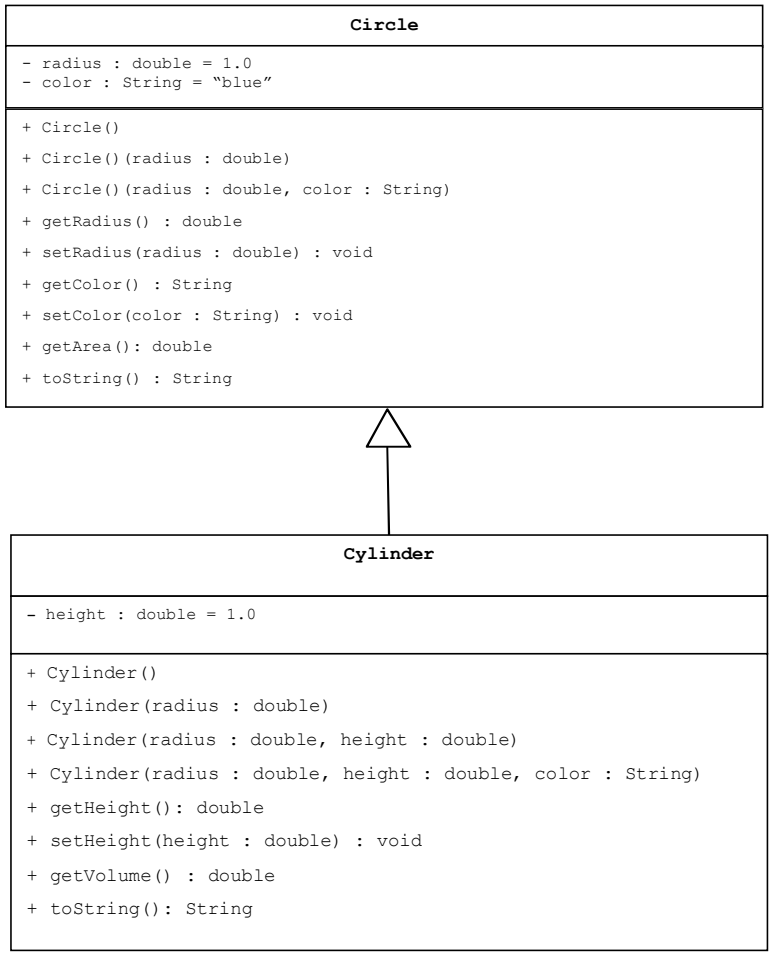
Total 2 pages (excluding this page)

Name:_____ **ID:**_____ **Seat:**_____

Instructions for Question 1:

- Create a package "u***ID***_question1" where ID is your student *ID*.
- Name your main program as TestCircleNCylinder.
- Put all your source files in "u***ID***_question1" package.
- Compressed "u***ID***_question1" folder in the "src" folder (.zip)
- Your submission will not be marked if the program cannot be successfully compiled.

1. (15 points) **Circle and Cylinder**



A subclass called `Cylinder` is derived from the superclass `Circle` as shown in the class diagram (where an arrow pointing up from the subclass to its superclass).

a. (5 points) Implement a class `Circle` based on the given class diagram above.
b. (5 points) Implement a class Cylinder as a subclass of the Circle class.
c. (5 points) Implement another class called TestCircleNCylinder to test all constructors and methods of Circle and Cylinder class.

Instructions for Question 2:

- Create a package "u***ID***_question2" where ID is your student *ID*.
- Name your main program as TestHollowCylinder.
- Put all your source files in "u***ID***_question2" package.
- Compressed "u***ID***_question2" folder in the "src" folder (.zip)
- Your submission will not be marked if the program cannot be successfully compiled.

2. (5 points) **HollowCylinder**
Implement a class HollowCylinder as a subclass of Circle class. Provide proper fields, constructors, and methods for this class including with getVolume() method.

Instructions for Question 3:

- Create a package "u***ID***_question3" where ID is your student *ID*.
- Name your main program as TestCylinderNHollowCylinder.
- Put all your source files in "u***ID***_question3" package.
- Compressed "u***ID***_question3" folder in the "src" folder (.zip)
- Your submission will not be marked if the program cannot be successfully compiled.

3. (10 points) **Abstract class**
   Modify the classes from Questions 1 and Question 2 by change the concrete parent class, Circle to become the abstract class which contains the abstract method, getVolume(). Implement TestCylinderNHollowCylinder class to test the modified class.

End of Examination Questions