



**COMP 248**  
**Winter 2016**

**Tutorial 8**

# Question 1

Given the following class definition:

```
public class AClass {  
    private int a;  
    public int b;  
  
    public AClass() {  
        a = 10;  
        b = 10;  
    }  
    private void increment() {  
        increment(1);  
    }  
    public void increment(int i) {  
        a+= i;  
        b+= i;  
    } }  
}
```

And the following declaration in the driver class:

```
AClass obj1 = new AClass();
```

Indicate if the following instructions will cause a syntax error if they are placed in the driver class after the mentioned declaration. If there is an error, briefly explain why.

1. `System.out.print(obj1);`
2. `AClass.increment(5+5);`
3. `System.out.print(obj1.a);`
4. `System.out.print(obj1.b);`

## Question 2 (A)

Write a complete class called `GasPump` to represent a gas pump.

- The class should have a *constructor* to set the amount of available gas supply (in liters) and the price of gas per liter.
- The class interface should include:
  - *Accessors* and *mutators* methods to set and get the gas price.
  - An *accessor* method to get the current amount of gas supply.

## Question 2 (A) - Continued

- A method to add fuel to the gas supply. Note that the maximum capacity of the pump is 5000 liters. If we try to add too much fuel, once the maximum capacity is reached, no more fuel can be added
- A method that sells a specific amount of gas. This method should reduce the supply of available gas by the amount sold and return the total cost of the gas sold. If the supply of the available gas is less than the amount requested, then only the existing supply should be sold.

## Question 2 (B)

Using the class defined in part A, write a driver program that:

- Creates an object called `shell` of the class `GasPump` and initializes it to 3000 liters and 78.5 cents a liter
- Asks the user how much gas he/she wants to buy
- Sells this amount of gas from `shell`;
- Adds 500 liters of gas to `shell`;
- Displays the content of gas supply left in `shell`.

# Question 3

Write a `Bicycle` class that

- The class has the following *instance variables*:
  - `Cadence`, `speed`, `gear` of type `integer`
- The class has the following methods that have a `void` return type:
  - `changeCadence`
  - `changeGear`
  - `speedUp`
  - `applyBrakes`
  - `printStates`

*Then write a driver to test your class.*