AP Computer Science A
Ticket Out the Door
Set 25: Abstract Classes and Interfaces

Name _____ Period _____

Skill 25.1: Exercise 1

The MyCar class below extends the Car class. For each line of code indicated with a letter (A – E), indicate whether the statement is valid or invalid. If it is invalid, indicate why.

```
public abstract class Car{

    private int year = 2015;
    private String model = "Landcruiser";

    public abstract String getMake();          (A)

    public abstract int getYear(){
        return year;                           (B)
    }

    public String model(){
        return model;                          (C)
    }
}
```

```
public class MyCar extends Car{
    public static void main(String args[]){

        Car newCar = Car();                    (D)
    }
    public String getMake(){
        return "Toyota";                       (E)
    }
}
```

(A)

(B)

(C)

(D)

(E)

Skill 25.2: Exercise 1

(a) Declare an abstract class Insect. Then declare another class called Bee which inherits Insect, then write a main method.
(b) Declare a method in the Insect class called getLegs(), which returns the number of legs as an int.
(c) Declare a Boolean abstract method in the Insect class called canFly()
(d) In the Bee class, call the getLegs method
(e) In the Bee class, implement and call the canFly method

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Skill 25.3: Exercise 1

(a) Declare an interface called Animal
(b) Declare a class called Ant that implements Animal

Skill 25.4: Exercise 1

Consider the vehicle interface below. The Car and Bike classes implement the Vehicle interface. Write the Car and Vehicle classes.

```
Public interface Vehicle {

  // all are the abstract methods.
  void changeGear(int a);
  void speedUp(int a);
  void applyBrakes(int a);
}
```