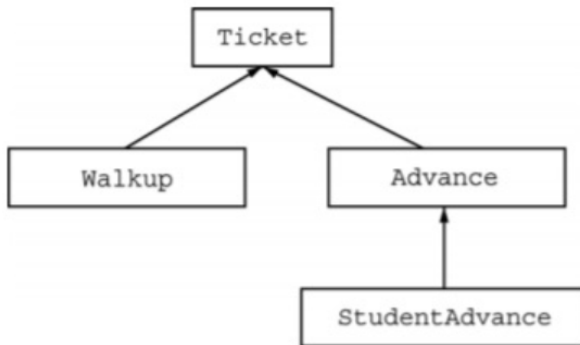A set of classes is used to handle the different ticket types for a theater. The class hierarchy is shown in the following diagram.

All tickets have a serial number and a price. The class Ticket is specified as an abstract class as shown in the following declaration.

```
public abstract class Ticket
{
    private int serialNumber;    // unique ticket id number

    public Ticket()
    {   serialNumber = getNextSerialNumber();   }

    // returns the price for this ticket
    public abstract double getPrice();

    // returns a string with information about the ticket
    public String toString()
    {
        return "Number: " + serialNumber + "\nPrice: " + getPrice();
    }

    // returns a new unique serial number
    private static int getNextSerialNumber()
    {   /* implementation not shown */   }
}
```

Each ticket has a unique serial number that is assigned when the ticket is constructed. For all ticket classes, the toString method returns a string containing the information for that ticket. Three additional classes are used to represent the different types of tickets and are described in the table below.

Class	Description	Sample toString Output
Walkup	These tickets are purchased on the day of the event and cost 50 dollars.	Number: 712 Price: 50
Advance	Tickets purchased ten or more days in advance cost 30 dollars. Tickets purchased fewer than ten days in advance cost 40 dollars.	Number: 357 Price: 40
StudentAdvance	These tickets are a type of Advance ticket that costs half of what that Advance ticket would normally cost.	Number: 134 Price: 15 (student ID required)

Using the class hierarchy and specifications given above, you will write complete class declarations for the Advance and StudentAdvance classes.

a. Write the complete class declaration for the class Advance. Include all necessary instance variables and implementations of its constructor and method(s). The constructor should take a parameter that indicates the number of days in advance that this ticket is being purchased. Tickets purchased ten or more days in advance cost $30; tickets purchased nine or fewer days in advance cost $40.

b. Write the complete class declaration for the class StudentAdvance. Include all necessary instance variables and implementations of its constructor and method(s). The constructor should take a parameter that indicates the number of days in advance that this ticket is being purchased. The toString method should include a notation that a student ID is required for this ticket. A StudentAdvance ticket costs half of what that Advance ticket would normally cost. If the pricing scheme for Advance tickets changes, the StudentAdvance price should continue to be computed correctly with no code modifications to the StudentAdvance class.