**AbstractShape**

**Directions:** Create the classes below. Pentagon should be created as the subclass of AbstractShape.

**AbstractShape** – Abstract Class

**Instance Variables:**

* One double variable for the length of the side of the shape

**Constructors:**

* *AbstractShape()*
* *AbstractShape(double s)*

**Methods:**

* Create *final* accessors & mutators for the *side* variable
* *area()* – abstract method that returns a double
* *perimeter()* – abstract method that returns a double
* *toString()* of the form:

Side: 5.0

Area: 43.012

Perimeter: 25.0

**Pentagon –** Concrete Class

**Variables:**

* public static final variable for the number of sides of a pentagon

**Constructors:**

* *new Pentagon()*
* *new Pentagon(double s)*

**Methods:**

* Provide implementation for the *area()* and *perimeter()* methods
* *toString()* of the form (with rounded outputs):

Pentagon

Side: 5.0

Area: 43.012

Perimeter: 25.0

**AbstractShapeMain**

**Directions:**

1. Create a new AbstractShape variable called *a1*.
2. Instantiate *a1* as a Pentagon with side length of 5.
3. Print *a1*.