

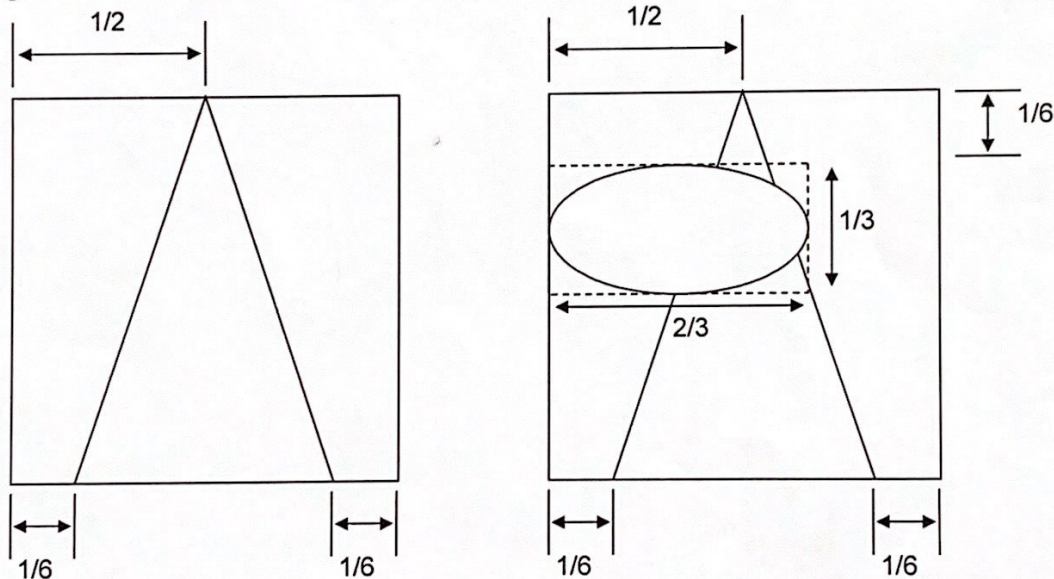
Name and, if possible, ID#: Lu

### Problem 2

All 6 types of chess pieces can be drawn based on simple sketches consisting of a triangular base and rectangular cap. Consider below a **public class ChessPiece** that implements the triangular base only. Its geometry relative to the unit size of the square field is also shown:

```
public class ChessPiece {  
    private Rectangle field;  
    private Polygon base;  
  
    public ChessPiece(int size) {  
        field = new Rectangle(size, size);  
        base = new Polygon(); //initially empty polygon  
        base.addPoint(size / 6, size); //left vertex of the base  
        base.addPoint(5 * size / 6, size); //right vertex of the base  
        base.addPoint(size / 2, 0); //top vertex of the base  
    }  
  
    public void drawBase(Graphics g) {  
        g.drawRect(field.x, field.y, field.width, field.height);  
        g.drawPolygon(base);  
    }  
  
    public void drawCap(Graphics g) {  
    }  
  
    public void draw(Graphics g) {  
        g.drawBase(g);  
        g.drawCap(g);  
    }  
}
```

Extend a **public class Knight** extends **ChessPiece** that encapsulates **Rectangle cap** member variable. Implement the constructor and override **public void drawCap(Graphics g)**. The geometries of the general chess piece and the knight are shown below:



```
{ private rectangle field;  
  private polygon field;  
  private rectangle cap;  
  public ChessPiece(int size)  
  {  
    - - -  
  }
```

```
cap = new Rectangle(0,
```