# Practice Examples for Lab: Set 1

- 1

Modify the program given in the text so that it asks for the side length of the polygon to be drawn in addition to asking for the number of sides.

- 2

A pentagram is a five pointed star, drawn without lifting the pen. Specifically, let A,B,C,D,E be 5 equidistant points on a circle, then this is the figure A–C–E–B–D–A. Draw this.

- 3

If you draw a polygon with a large number of sides, say 100, then it will look essentially like a circle. In fact this is how circles are drawn: as a many sided polygon. Use this idea to draw the numeral 8 – two circles placed tangentially one above the other.

- 4

Read in the lengths of the sides of a triangle and draw the triangle. You will need to know and use trigonometry for solving this.

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- 5 We wrote "360.0" in our program rather than just "360". There is a reason for this which we will discuss later. But you could have some fun figuring it out. Rewrite the program using just "360" and see what happens. A more direct way is to put in statements `cout << 360/11; cout << 360.0/11;` and see what is printed on the screen. This is an important idea: if you are curious about "what would happen if I wrote ... instead of ...?" – you should simply try it out!
- 6
  - https://en.wikipedia.org/wiki/Heptagram

  Draw a seven pointed star in the same spirit as above. Note however that there are more than one possible stars. An easy way to figure out the turning angle: how many times does the turtle turn around itself as it draws?