Mathematics 2260H – Geometry I: Euclidean Geometry
Trent University, Winter 2024
Assignment #7
Circles and Triangles
Due* just before midnight on Friday, 8 March.

1. Given three infinite lines ℓ, m and n, that do not all meet at a single point, explain how to find the centres of and then draw all the circles that are tangent to all three lines. *[6]*

Note. The incentre and incircle of the triangle formed by the three lines is one such combination of centre and circle. There are several more . . .

2. Suppose AB is a line segment parallel to and not part of an infinite line ℓ. Explain how to locate the centre of and then draw a circle that passes through the points A and B and is tangent to the line ℓ. *[4]*

"Parallel lines meet at infinity!"
Euclid repeatedly, heatedly, urged.
Until he died, and so reached that vicinity:
in it he found that the damned things diverged.

A grook by *Piet Hein*.