Problem Set 2

*Please complete and submit **any ONE** of the following problems. The deadline for submission is January 7 by 11:59 PM. Send your submission by email to benjamin.fedoruk@ontariotechu.ca with the header "[Surname] Problem 2".*

1. Prove that if *s* is a constructible number, then *1/s* is a constructible number.
2. Prove that if s is a constructible number, then $\sqrt{s}$ is a constructible number.
3. To each constructible circle C, there is a corresponding unique equation $(x - a)^2 + (y - b)^2 - r^2 = 0$ where a, b and r (r>0) are constructible numbers.
4. Prove that if p and q are constructible numbers and q is nonzero, then p/q is a constructible number.
5. Prove that if s and t are constructible numbers and t is nonzero then the point of intersection of the lines y=sx and y=tx+t is constructible.