

The Dragon Academy
G11 Functions and Applications
Term 3
Assignment 3
Due date: Thu Apr. 4th 2019

March 29, 2019

This assignment refers to the concepts discussed in class on Fri. 29th March 2019. See the class slides by following [this link](#).

1 Graphical approach

1. Open [Geogebra](#) and do/answer the following:
 - (a) Plot the line $y = -\frac{2}{3}x + 1$.
 - (b) Plot the parabola $y = (x - 1)^2 - 2$.
 - (c) On how many points do both functions intersect?
 - (d) Determine approximately, i.e., on the graph, those intersection points.
2. Open [Geogebra](#) and do/answer the following:
 - (a) Plot the line $y = 2x - 5$.
 - (b) Plot the parabola $y = (x - 1)^2 - 2$.
 - (c) On how many points do both functions intersect?
 - (d) Determine approximately, i.e., on the graph, those intersection points.
3. Open [Geogebra](#) and do/answer the following:
 - (a) Plot the line $y = 2x - 7$.
 - (b) Plot the parabola $y = (x - 1)^2 - 2$.
 - (c) On how many points do both functions intersect?

2 Algebraic approach

1. Determine the intersection points of the line and the parabola of problem (1) above. Give your results with 2 decimals max.
2. Determine the intersection points of the line and the parabola of problem (2) above. Give your results with 2 decimals max.