Tutorial Session 2

1. Section 1.5 exercises 77 , 78

2. Section 2.3 exercises 15* , 16 , 20 , 34 , 35 , 36 , 37

3. Calculate $\lim_{x\to\infty}(\sqrt{(x+1)(x+2)}-x)$

4. Calculate $\lim_{x\to\infty} x^{\frac{3}{2}}(\sqrt{x^3+1}-\sqrt{x^3-1})$

5. Use limits to determine the values of a and b so that the function defined by

$$f(x)=\begin{cases} ax & x<-1 \\ 2 & x=-1 \\ x^2+b & x>-1 \end{cases}$$

   is continuous for all real numbers.

6. Use the synthetic division to divide the polynomial $p(x)=4x^5+3x^3-2x^2+1$ by the linear factor $x+3$.