Answer and Hints of Tutorial Sheet 6

1. Ans. $f(1.5) = 7.375$. Use Newton's forward difference formula.

2. Ans. $f(1) = 3$, $f(4) = 24$. Assume $f(x)$ is a polynomial of degree 3 and $\triangle^4 f(x) = 0$.

3. Ans. 197. Use Newton's forward difference formula and $x_0 = 60$.

4. Ans. $f(21) = 17.2$.

5. Ans. $f(1.02) = 0.8521$.

6. Ans. $x^2 - 3x + 5$.

8. (a) Ans. 1.38934, (b) Ans. 1.38858

9. Ans. $\frac{h}{2}(f(x_0) + f(x_1))$.

10. (a) Ans. -3.9×10^{-3}, (b) Ans. -1.129×10^{-4}.

11. Ans.0.0003125

12. Ans.0.00091

13. (a) Use formula for truncation error, (b) Ans. 0.0580.