Brief answer to selected problems in Homework 07

1. Section 4.2:

   problem 17(b): The new polynomial is the derivative of the original polynomial. Apply Rolle's Theorem to the original polynomial.

   problem 18: Apply Rolle's Thorem to f, then to f'.

   problem 65: Apply mean value theorem to f on $[0, x]$.

   problem 66: Apply mean value theorem to $\sin(x)$ on $[a, b]$.

2. Section 4.3:

   problem 74: Solve for a, b, c, d from $f(0) = 0$, $f(1) = -1$, $f'(0) = 0$ and $f'(1) = 0$.

   problem 80: (a): Show that $f(x) = e^x - (1+x)$ satisfies $f(0) = 0$ and f is increasing on $x \geq 0$. (b): Show that $g(x) = e^x - (1 + x + x^2/2)$ satisfies $g(0) = 0$ and g is increasing on $x \geq 0$ using the result in (a).