5.
Hint: What the three hypotheses that f must satisfies to apply Rolle's Theorem?

11.
Hint: $f(x) = 3x^2 + 2x + 5$ is apolynomial, which is continuous and differentiable on its domain.

18.
Hint:Let $f(x) = 2x - 1 - \sin x$, $f(x)$ is continuous and differentiable on its domain.
What behavior does the function $f(x)$ have? Is $f(x)$ a monotonic function?

26.
Hint:Let $h(x) = f(x) - g(x)$, consider the derivative of $h(x)$. Applies the mean value theorem on $h(x)$.

27.
Hint:Let $f(t) = \sqrt{1+t} - (1 + \frac{1}{2}t)$, $f(t)$ is continuous on $[0, \infty)$ and differen-

tiable on $(0, \infty)$. Find the derivative of $f(t)$.
For any given $x > 0$, treat it as a fixed point and apply the mean value theorem on $f(t)$ on the interval $[0, x]$.

27.
Hint:Let $f(x) = \sin x \Rightarrow f(x)$ is continuous and differentiable on its domain. Find $f'(x)$, then apply the mean value theorem on $f(x)$. What is the range of $f'(x)$?