

$$L \quad 03 \geq 07 \quad \forall \text{ACPE } R$$

3. 7.

$$\Phi(x) = x + f(x) \cdot g(x)$$

$$\Rightarrow \Phi(x) = x + \underbrace{f(x) \cdot g(x)}_0 = x$$

$$\begin{aligned} \Phi'(x) &= 1 + f'(x) \cdot g(x) + \underbrace{f(x) \cdot g'(x)}_0 = \\ &= 1 + f'(x) \cdot g(x) = 0 \end{aligned}$$

$$\underbrace{g(x) = \frac{-1}{f'(x)}}_1$$

$$\begin{aligned} \Phi''(x) &= f''(x) \cdot g(x) + f'(x) \cdot g'(x) + \\ &+ f'(x) \cdot g'(x) + \underbrace{f(x) \cdot g''(x)}_0 = 0 \end{aligned}$$

$$= 2f'(x) \cdot g'(x) + \frac{f''(x)}{\frac{-1}{f'(x)}} = 0$$

$$g'(x) = \frac{f'(x)}{2(f'(x))^2}$$

$$\begin{aligned} \Phi''(x) &= f''(x) \cdot g(x) + 2f'(x) \cdot g'(x) + f(x) \cdot g''(x) \\ \Phi''(x) &\neq 0 \end{aligned}$$

$$= f'''(x) \cdot g(x) + \underbrace{f''(x) \cdot g'(x)} + \underbrace{2f''(x) \cdot g'(x)} + \underbrace{2f'(x)g''(x)}$$

$$+ \underbrace{f'(x) \cdot g''(x)} + \underbrace{f(x) \cdot g'''(x)} =$$

$$= 3f''(x) \cdot g'(x) + 3f'(x) \cdot g''(x) + f'''(x) \cdot g(x)$$

$\neq 0$

$$3f''(x) \cdot \frac{f''(x)}{2(f'(x))^2} + 3f'(x) \cdot g''(x) + f'''(x) \cdot \frac{1}{f'(x)}$$

$$g''(x) \cdot 3f'(x) \neq \frac{f''(x)}{f'(x)} - \frac{3(f''(x))^2}{2(f'(x))^2}$$

$$g''(x) \neq \frac{2f''(x)f'(x) - 3(f''(x))^2}{(f'(x))^3}$$