④ $f(x) = \text{sen } x^2$

$f'(x) = \cos x^2 \ (x^2)'$

$f'(x) = 2x \cos x^2 \ /\!/$

① $f(x) = (\text{sen } x)^2$

$f'(x) = 2 (\text{sen } x)(\text{sen } x)'$

$f'(x) = 2 (\text{sen } x)(\cos x)$

$f'(x) = 2 \cos x \ \text{sen } x \ /\!/$

③

$g(x) = \sqrt{x^2 + 2x + 3}$

$g(x) = (x^2 + 2x + 3)^{1/2}$

$g'(x) = \dfrac{1}{2} (x^2 + 2x + 3)^{-1/2} \ (x^2 + 2x + 3)'$

$g'(x) = \dfrac{(x^2 + 2x + 3)^{-1/2} (2x + 2)}{2}$

$g'(x) = \dfrac{2(x+1)}{2(x^2 + 2x + 3)^{1/2}}$

$g'(x) = \dfrac{(x+1)}{(x^2 + 2x + 3)^{1/2}}$

$g'(x) = (x+1)(x^2 + 2x + 3)^{-1/2}$

$g''(x) = (x+1)'(x^2 + 2x + 3)^{-1/2} + (x^2 + 2x + 3)^{-1/2'}(x+1)$

$g''(x) = (1)(x^2 + 2x + 3)^{-1/2} - \dfrac{1}{2}(x^2 + 2x + 3)^{-3/2}(x^2 + 2x + 3)'(x+1)$

$g''(x) = \dfrac{1}{(x^2 + 2x + 3)^{1/2}} - \dfrac{(2x+2)(x+1)}{2(x^2 + 2x + 3)^{3/2}}$

$g''(x) = \dfrac{1}{(x^2 + 2x + 3)^{1/2}} - \dfrac{2(x+1)(x+1)}{2(x^2 + 2x + 3)^{3/2}}$

$g''(x) = \dfrac{x^2 + 2x + 3 - x^2 - 2x - 1}{(x^2 + 2x + 3)^{3/2}}$

$g'' = \dfrac{2}{(x^2 + 2x + 3)^{3/2}} \ /\!/$