CALCULUS
Problem Bank
The product rule
\[ \frac{d}{dx} [\sin x] = \cos x \]

\[ \frac{d}{dx} [(x^2)(\sin x)] = ?? \]

(a) \((2x)(\cos x)\)
(b) \((2x)(-\cos x)\)
(c) \((2x)(\sin x) + (x^2)(\cos x)\)
(d) none of the above
\[ h'(x) = [f'(x)][g(x)] + [f(x)][g'(x)] \]

\[ h'(4) = [f'(4)][g(4)] + [f(4)][g'(4)] \]

\( f(4) = 7 \), \( f'(4) = 1 \)
\( g(4) = 6 \), \( g'(4) = 3 \)
\( h(x) = [f(x)][g(x)] \)
\( h(4) = ??, \ h'(4) = ?? \)

(a) 42, 3
(b) 13, 27
(c) 42, 27
(d) none of the above