I. Inverse Function Introduction —

1. \( f(x) = 2x \) \& \( g(x) = \frac{1}{2} x \) are “inverses”

2. \( f(x) = x + 2 \) \& \( g(x) = x - 2 \) " "

3. \( f(x) = x^2 \) \& \( g(x) = \sqrt{x} \) " "

II. Find \((f \circ g)(x)\) for each of the three pairs \( f \& g \)

1. \( f [g(x)] = \)

2. \( f [g(x)] = \)

3. \( f [g(x)] = \)

* almost but not quite...
III. Inverse Function Essentials –

1. Definition (p.163):
   \( f(x) \) & \( g(x) \) are inverse functions whenever
   \[ f[g(x)] = x = g[f(x)] \]

2. Notation (p.160):
   When \( f(x) \) & \( g(x) \) are inverses, the functional notation
   \( f^{-1}(x) = g(x) \) & \( g^{-1}(x) = f(x) \) is often utilized (to denote their “inverse” relationship)...

3. Procedure for finding \( f^{-1} \) (p.162):
   Swap the variables \( x \) & \( y \), solve the resulting equation for \( y \) (and substitute the \( f^{-1} \) notation).
IV. Examples (p.168): Exercises #48, 52, 56, 60, 66

HW: pp.168-169 / Exercises #45-65 (odd), 81
Read section 2.5 (pp.157-166)