

Ex 1:

$$f(x) = 4x - 6$$

$$g(x) = \sqrt{x}$$

$$f \circ g, g \circ f$$

$$D_{f \circ g}, V_{f \circ g}$$

$$D_{g \circ f}, V_{g \circ f}$$

$$f(g(x)) = f(\sqrt{x}) = \boxed{4\sqrt{x}} - 6$$



$$D_f = \mathbb{R}, D_g = [0, \infty) \quad \underline{V_f = \mathbb{R}}^{f \circ g}$$

$$D_{f \circ g} = [0, \infty)$$

$$\underline{V_{f \circ g} = [-6, \infty)}$$

$$V_{f \circ g} \subseteq V_f$$

$$4x - 6 \geq 0$$

$$x \geq \frac{3}{2}$$

$$g(f(x)) = g(4x - 6) = \sqrt{4x - 6}$$

$$V_g = [0, \infty)$$

$$D_{g \circ f} = \left[\frac{3}{2}, \infty\right), V_{g \circ f} = [0, \infty)$$