

$$2.) \quad u(x) = x^2; \quad v(x) = x+2; \quad w(x) = \sqrt{x}$$

$$(u+v)(x) = x^2 + x + 2$$

$$(u \cdot v)(x) = x^2 \cdot (x+2) = x^3 + 2x^2$$

$$(u \circ v)(x) = (x+2)^2$$

$$(w \cdot v)(x) = \sqrt{x} \cdot (x+2)$$

$$(w \circ v)(x) = \sqrt{x+2}$$

3.)

x	-2	-1	0	1	2	3	4	5
u ∘ v	4	2	1	3	1	2	3	4
v ∘ u	-1	1	-1	0	1	0	1	-2

u ∘ v

$$v(-2) = -2 \rightarrow u(-2) = 4$$

$$v(-1) = 1 \rightarrow u(1) = 2$$

$$v(0) = 0 \rightarrow u(0) = 1$$

$$v(1) = -1 \rightarrow u(-1) = 3$$

$$v(2) = 0 \rightarrow u(0) = 1$$

$$v(3) = 1 \rightarrow u(1) = 2$$

$$v(4) = -1 \rightarrow u(-1) = 3$$

$$v(5) = -2 \rightarrow u(-2) = 4$$

v ∘ u

$$u(-2) = 4 \rightarrow v(4) = -1$$

$$u(-1) = 3 \rightarrow v(3) = 1$$

$$u(0) = 1 \rightarrow v(1) = -1$$

$$u(1) = 2 \rightarrow v(2) = 0$$

$$u(2) = 3 \rightarrow v(3) = 1$$

$$u(3) = 2 \rightarrow v(2) = 0$$

$$u(4) = 3 \rightarrow v(3) = 1$$

$$u(5) = 5 \rightarrow v(5) = -2$$