Section 1.4: Building Functions from Functions

Ex 1) Find $(f \circ g)(3)$ **and** $(g \circ f)(-2)$ **when**

$f(x) = x^2 + 4$ **and** $g(x) = \sqrt{x+1}$

Ex 2) Find $(f \circ g)(x)$ **and** $(g \circ f)(x)$ **. State the domain of each**

$f(x) = x^2 - 2$ **and** $g(x) = \sqrt{x+1}$

Ex 3) In the medical procedure known as angioplasty, doctors insert a catheter into a heart vein and inflate a small spherical balloon on the tip of the catheter. Suppose the balloon is inflated at a constant rate of 44 cubic millimeters per second.

a) Find the volume after t seconds

b) When the volume is V, what is the radius? (Write an equation that gives the radius r as a function of the volume V)

c) Write an equation that gives the radius r as a function of time t.

d) What is the radius after 5 seconds?