1. Find $f \circ g \circ h$.

   (a) $f(x) = x + 1,\ \ g(x) = 2x,\ \ h(x) = x - 1.$

   (b) $f(x) = \sqrt{x-1},\ \ g(x) = x^2,\ \ h(x) = x^3 + 2.$

2. Express the function in the form $f \circ g$.

   (a) $F(x) = \cos^2 x$

   (b) $u(t) = \dfrac{\tan t}{1 + \tan t}$

3. Express the function in the form $f \circ g \circ h$.

   (a) $H(x) = 1 - 3^{x^2}$

   (b) $R(x) = \sqrt{\sqrt{x} - 1}$

   (c) $S(t) = \sin^2(\cos t)$

4. A stone is dropped into a lake, creating a circular ripple that travels outward at a speed of 60 cm/s.

   (a) Express the radius r of this circle as a function of the time t (in seconds).

   (b) If A is the area of this circle as a function of the radius, find $A \circ r$ and interpret it.

5. If you invest x dollars at 4% interest compounded annually, then the amount $A(x)$ of the investment after one year is $A(x) = 1.04x$. Find $A \circ A$, $A \circ A \circ A$, and $A \circ A \circ A \circ A$. What do these compositions represent? Find a formula for the composition of n copies of A.