The definition of the derivative in Sec. 2.1 gives the approximation

\[ f'(x) = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h} \]

for \( h \to 0 \).

Solve this approximate equality for \( f(x+h) \).

2. Use the approximation in #1 with

A) \( f(x) = \sqrt{x} \), \( x = 100 \), and \( h = 3 \)
   
   To approximate \( \sqrt{103} = f(x+h) \).

B) \( f(x) = \sqrt{x} \), \( x = 25 \), and \( h = -2 \)
   
   To approximate \( \sqrt{23} = f(x+h) \).

C) \( f(x) = \sqrt{x} \), \( x = 8 \), and \( h = 3 \)
   
   To approximate \( \sqrt{11} = f(x+h) \).

D) \( f(x) = x^6 \), \( x = 1 \), and \( h = .0025 \)
   
   To approximate \( (1.0025)^6 = f(x+h) \).