1. Let $f(x) = x^5 + 2x^4 - x^3 + 6x^2 - 7x + 3$. Find the following derivatives:

   (a) $f'(x)$

   (b) $f^{(2)}(x)$

   (c) $f^{(3)}(x)$

   (d) $f^{(4)}(x)$

   (e) $f^{(5)}(x)$

   (f) $f^{(6)}(x)$

   What is a formula for $f^{(n)}(x)$ when $n \geq 6$ ?

2. Find the derivative of the following functions

   (a) $F(x) = \cos(x)\tan(x)$

   (b) $G(x) = \cos(\tan(x))$

   (c) $H(x) = \dfrac{\cos(x)}{\tan(x)}$