EXERCISE SET 2.3

1. Let $f(x) = x^2 - 6$, $p_0 = 3$, and $p_1 = 2$. Find p_3 using each method.

   (a) Secant method

2. Let $f(x) = -x^3 - \cos x$, $p_0 = -1$, and $p_1 = 0$. Find p_3 using each method.

   (a) Secant method

3. Use the Secant method to find solutions accurate to within 10^{-4} for the following problems.

   (a) $x^3 - 2x^2 - 5 = 0$, on $[1, 4]$

   (b) $x^3 + 3x^2 - 1 = 0$, on $[-3, -2]$

   (c) $x - \cos x = 0$, on $[0, \pi/2]$

   (d) $x - 0.8 - 0.2 \sin x = 0$, on $[0, \pi/2]$

4. Use the Secant method to find solutions accurate to within 10^{-5} for the following problems.

   (a) $2x \cos 2x - (x - 2)^2 = 0$ on $[2, 3]$ and on $[3, 4]$

   (b) $(x - 2)^2 - \ln x = 0$ on $[1, 2]$ and on $[e, 4]$

   (c) $e^x - 3x^2 = 0$ on $[0, 1]$ and on $[3, 5]$

   (d) $\sin x - e^{-x} = 0$ on $[0, 1]$, on $[3, 4]$ and on $[6, 7]$

Exercise Set 2.3 (Page 000)

1. a. $p_3 = 2.45454$ **b.** $p_3 = 2.44444$

3. Using the endpoints of the intervals as p_0 and p_1, we have the following.

a. $p_{11} = 2.69065$ **b.** $p_7 = -2.87939$ **c.** $p_6 = 0.73909$ **d.** $p_5 = 0.96433$