Name:

Section: 7 8

1. Find the Taylor polynomial T_2 of order 2 of $f(x) = x^{2/3}$ centered at x = 8.

2. Use Taylor's inequality to find a bound on the error in using the approximation T_2 of f on the interval $|x-8| \leq 2$.

3. Solve the separable differential equation

$$\frac{dy}{dx} = y\cos(x).$$

4. Solve the first-order linear equation

$$(x+1)y' + 3y = x, \quad x > -1.$$