

### Quiz 3

Name: \_\_\_\_\_

You will have 20 minutes ◦ Calculators are allowed ◦ Show all work for credit ◦ Don't cheat ◦ attempts at a problem may count for partial credit. ◦ If you get stuck, show as much work as possible.

1. Compute these indefinite integrals. Show your work. [3 pts each]

(a)  $\int \frac{1}{5} \sqrt{t^3} dt$

(b)  $\int x^{2/3}(1-x) dx$

(c)  $\int \left( \sin(4x) - \frac{17}{x^7} \right) dx$

(d)  $\int \cos(t^4)t^3 dt$

2. [3 pts] Solve the following differential equation.

$$\frac{df}{dt} = -\frac{1}{t^2}e^{-1/t}, \quad f(1) = 1.$$

[Hint: try substituting  $u = 1/t$ .]