Name: **Date: 4/23/2014**

Directions: This is a calculator-heavy quiz. Sorry. No worries if you don't have one, just leave your answers unsimplified.

I'm so proud of this little piece of lesson planning: that motivating example I gave at the start of the class, about your probability of dying before age 30? That's your quiz question today! How neat.

Data shows that the distribution of ages of drivers in fatal car crashes is:

$$f(t) = \frac{4.045}{t^{1.532}} \quad \text{for } t \text{ in } [16, 80]$$

(a) What is the probability of dying in a car crash before age 30?

(b) What is the *expected* age of drivers dying in car crashes?

Now that you've calculated this, the twist is that $f(t)$ above is for fatalities from *drunk drivers* only, which we (presumably) are not. The survival probabilities and expected ages are of course usually much higher!