CHEMISTRY 31
Quiz 2 - 10 minutes
Spring, 2017

Name _____ Lab Section _____

1. A solution requires 0.200 g of methanol to prepare a standard. A chemist has a stock standard that is 21.6±0.5% methanol.
a) How many grams of the 21.6% methanol solution is needed to deliver 0.200 g of methanol? (3 pts)

b) If the uncertainty in the mass of solution delivered in a) is ±0.002 g, what is the uncertainty in the mass of methanol delivered? (4 pts)
For $Y = a*b$, $S_Y/Y = [(S_a/a)^2 + (S_b/b)^2]^{0.5}$

2. A test sample is analyzed for testosterone using a new method. The measured value is 38.11 ± 0.02 mg/L (second number is standard deviation) while the true value is 27.1 mg/L. It is desired to have % errors under 5% and % relative standard deviations under 2%. We can conclude that the measurement is:

a) precise and accurate
b) precise but not accurate
c) accurate but not precise
d) neither precise nor accurate

(3 pts)