Worksheet 4: Quality Assurance

1. A(n) _____ can be used to check the performance of your instrument and should have a recovery of between _____ and _____ percent as calculated by the formula _____.

2. A(n) _____ can be used to check variation in the composition of the sample and the _____ is a good measure of its difference from the sample, as calculated by the forumla _____. This difference should be less than _____ percent.

3. A(n) _____ can be used to check the effect of adding a known amount of analyte to a sample solution and should have a recovery of between _____ and _____ percent, as calculated by the formula _____.

4. Using the table below, calculate:

Run	Concentration (ng/mL)	Absorbance
Blank	0.0	0.0000
Std 1	2.0	0.0175
Std 2	10.0	0.0875
Std 3	20.0	0.1750
Std 4	30.0	0.2625
Std 5	50.0	0.4375
Std 6	75.0	0.6563
Std 7	100.0	0.8750
IPC	50.0	0.4411
Calibration Blank		0.0008
Sample		0.5425
Duplicate Sample		0.5372
LFSM	+10.0	0.6185
IPC	50.0	0.4367
Calibration Blank		0.0004

   (a) The extinction coefficient of EDTA

   (b) The missing concentrations

   (c) The percent recovery of the instrument performance checks

(d) The percent spike recovery

(e) The percent relative deviation of the replicate samples

5. Comment on the acceptability of the recoveries and deviation calculated above.