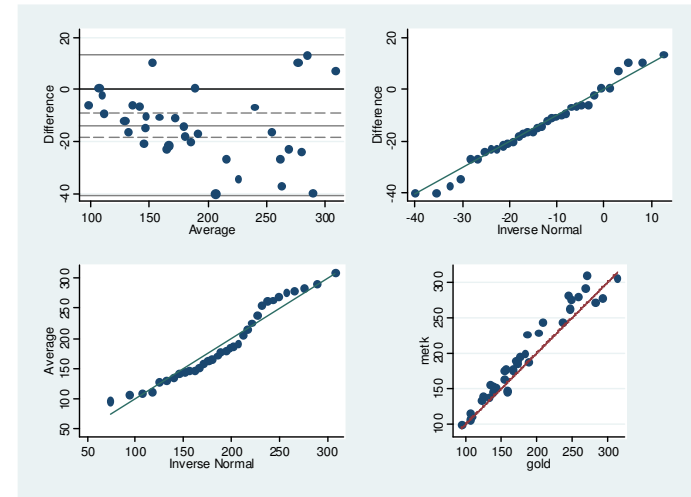


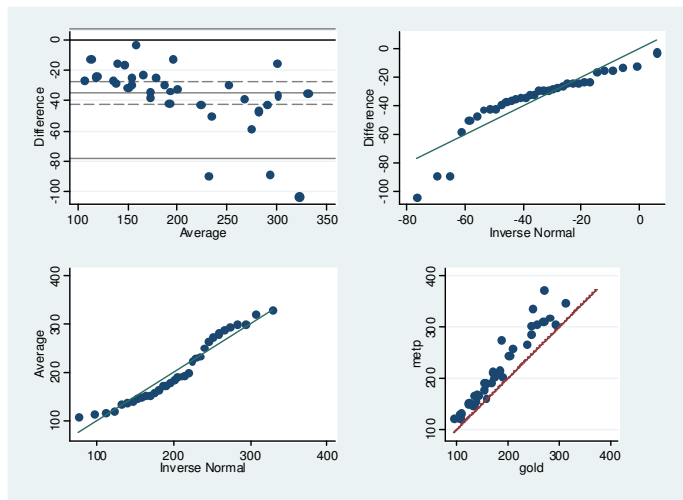
DAY 2 – Exercise 5

1. BAanalysis on raw data, all pairwise comparisons
2. BAanalysis on logtransformed data, all pairwise comparisons
3. BAanalysis of deviations (P and K) from gold standard on logtransformed data
4. Summary

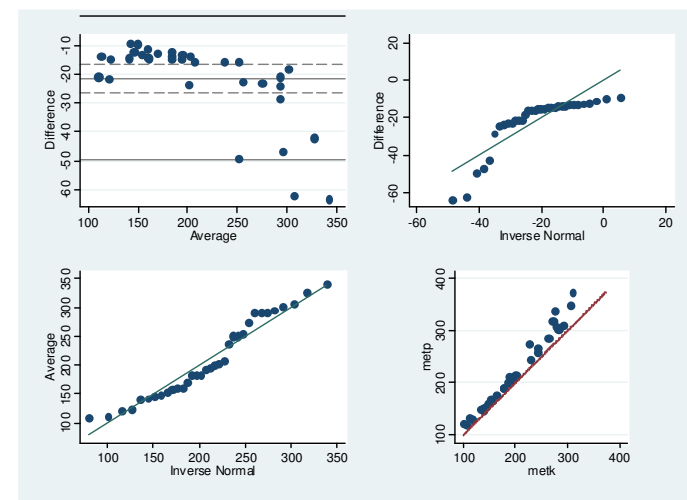
MetK vs Gold



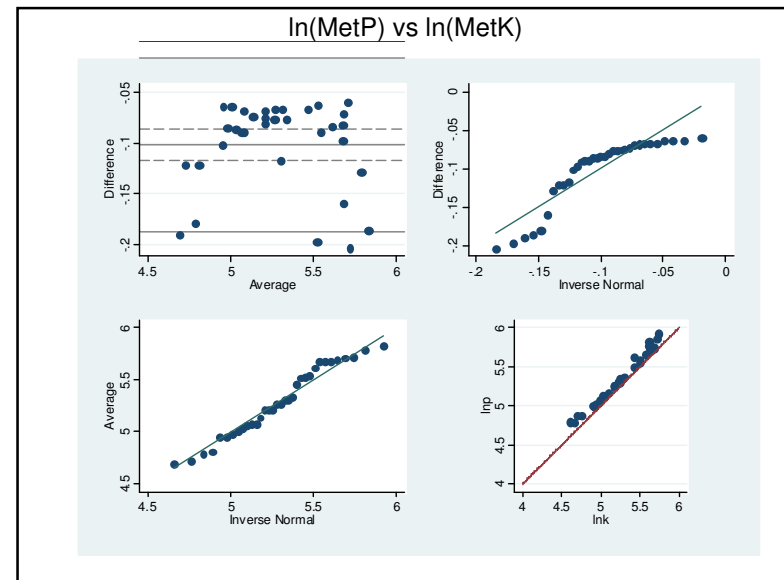
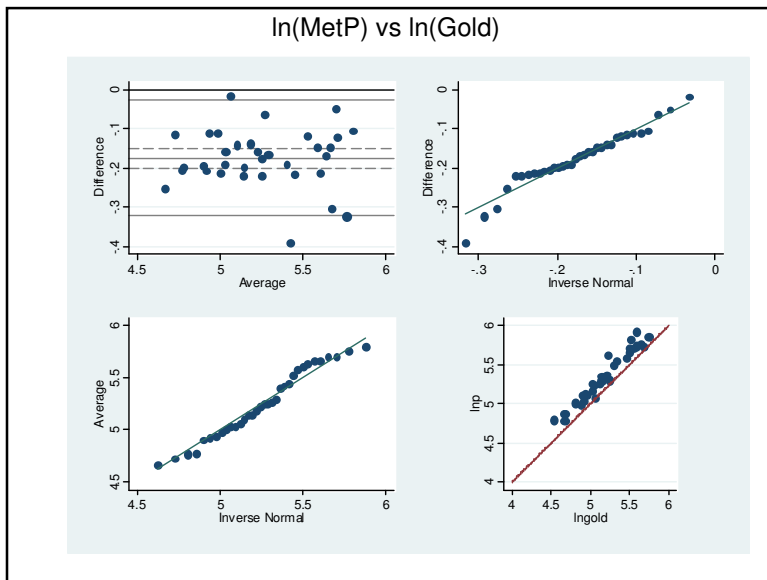
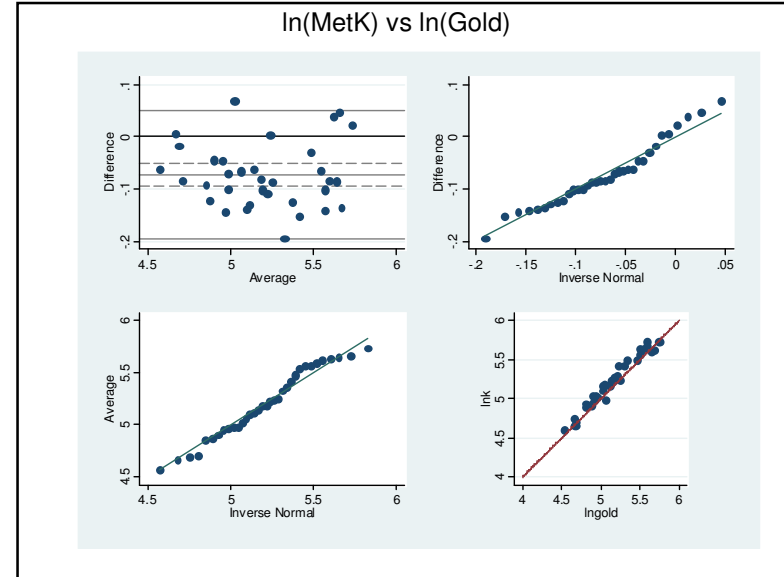
MetP vs Gold



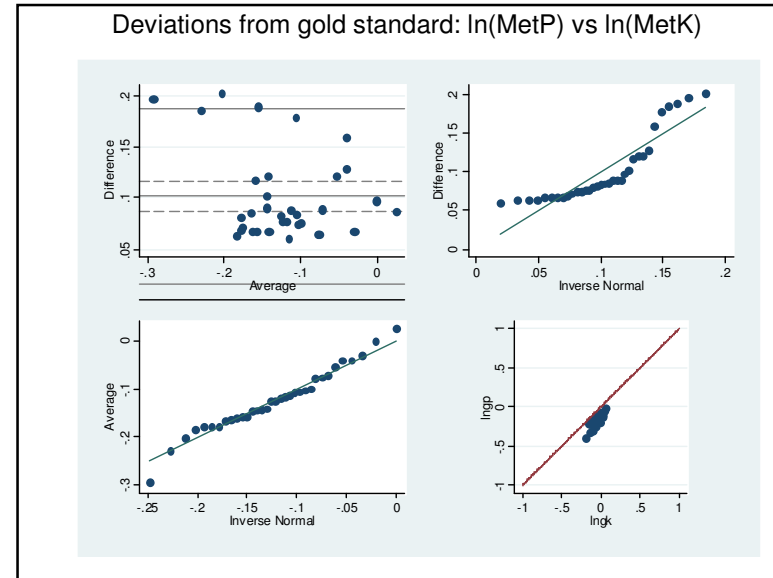
MetP vs MetK



	Gold-MetK	Gold-MetP	MetK-MetP
Mean (dif)	-13.781 (-18.6;-8.95) p = 0.000	-35.442 (-43.0;-27.8) p = 0.000	-21.661 (-26.6;-16.7) p = 0.000
SD(dif)	13.835 (11.2;18.2)	21.753 (17.5;28.6)	14.179 (11.4;18.7)
Corr (dif, ave)	-0.192 p = 0.277	-0.582 p = 0.000	-0.700 p = 0.000



	Ingold-lnk	Ingold-lnp	Ink-lnp
Mean (dif)	-0.073 (-0.10;-0.05) p = 0.000	-0.175 (-0.20;-0.14) p = 0.000	-0.102 (-0.12;-0.09) p = 0.000
SD(dif)	0.062 (0.05;0.082)	0.075 (0.06;0.098)	0.043 (0.04;0.057)
Corr (dif, ave)	-0.009 p = 0.962	-0.042 p = 0.812	-0.060 p = 0.735



Deviations from gold standard: ln(MetP) vs ln(MetK)

```

Bland-Altman comparison of lngk and lngp:

Number of differences n = 34.000
Range lngk : -0.195 to 0.068
Range lngp : -0.391 to -0.018

95% Limits of agreement (Reference Range for difference):
Lower Limit: 0.016 (CI -0.112 to 0.145)
Upper limit: 0.187 (CI 0.058 to 0.316)

Mean difference (bias lngk - lngp): 0.102 (CI 0.086 to 0.117 , p = 0.000)
Estimated sd on differences: 0.043 (CI 0.035 to 0.057)

Correlation between difference and average: Pearsons r = -0.303, p = 0.082
Correlation between difference and average: Spearmans rho = -0.076, p = 0.670

Comparison of two methods (strong assumptions!!):
Estimated between subject sd: 0.061 (variance 0.004)
Estimated additional error sd (lngk): 0.009 (variance 0.000)
Estimated additional error sd (lngp): 0.042 (variance 0.002)
Low or negative error variance indicates that model assumptions are violated.
    
```

**Correlated measurement errors:**  
pwcorr lngk lngp, sig obs      r=0.8, p<0.0001

Summary

Data should be analysed on log-scale

Method P shows a small (?) systematic difference compared to gold standard. Measurement errors of the same magnitude. BA-analysis is OK. Seems to be OK after recalibration to remove bias.

Method K shows a large (?) systematic difference compared to gold standard. Measurement errors of the same magnitude. Some outliers in BA-plots. BA-analysis?

Method P and K seems to have strongly correlated measurement errors (deviations from gold). Ba-analysis of deviations ??? Asymmetric behaviour in BA-plot. Distribution of deviations ??? Some indication of a larger measurement error on K than on P.