

1.

A) 211.4 g

B) 0.808g

C) Omdat een systematisch fout een fout op alle metingen zou hebben, alle metingen zouden dan op de verkeerde plek zitten en dus het gemiddelde van die metingen ook.

D) 0.256 g

E) 211.4 +- 0.3 g

2.

A) Mean = 17.58, stderr = 0.80

B) sample std/sqrt(n) = 0.5

samplestd/0.5=sqrt(n)

$n = (\text{samplestd}/0.5)^2$

$n = (2.53/0.5)^2$

$n = 25.6$

$25.6 - 10 = 15.6$

Dus je moet nog 16x meer meten.

3.

A) Mean = 1.01 mm, stderr = 0.04 mm

B) Student A is right if talking about standard error. To make it smaller you want to do as many measurements as possible. So that $\sigma_x = s/\sqrt{n}$ is as small as possible. The external measurement was 0.01mm, so you want to keep measuring till you get closer to that.

4.

A) Same

B) Decrease

C) Minimum will probably decrease, maximum will probably increase.