2006 Q2

(a) $\hat{y} = -2.1679 + 9.5000x$

$x$: amount of detergent (grams)
$y$: suds height (mm)

(b) $s = 1.99821$ mm is the standard deviation of the residuals. This means that the average error between actual suds height and predicted suds height (for given detergent amounts) is 1.99821 mm.

(c) $s_b (= SE_b) = 0.7553$ mm/g

If we ran many experiments and fitted an LSRL to each experiment's data, the slopes of those LSRLs would vary from experiment to experiment. The standard deviation of the distribution of the slopes would be 0.7553 mm/g.