Please turn in the homework and error analysis (if you haven't already).

Two-sample t-test for means
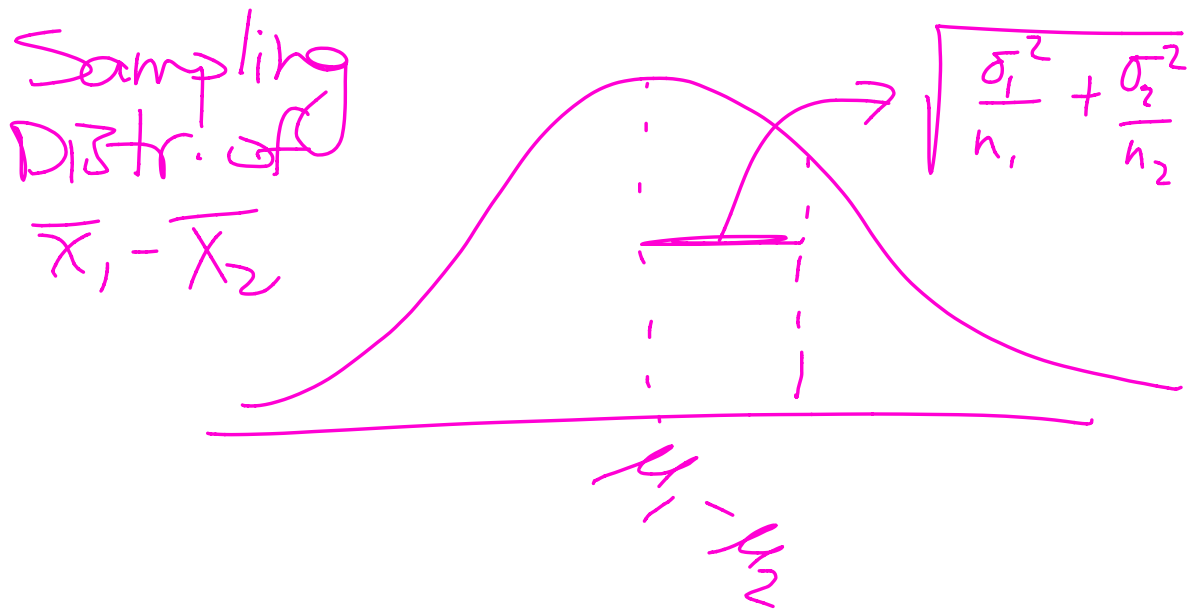
Sampling Distribution $\overline{X_1} - \overline{X_2}$

Shape —pop. normal
—$n \geq 30$

Center: $\mu_1 - \mu_2$

Spread $\sqrt{\dfrac{\sigma_1^2}{n_1} + \dfrac{\sigma_1^2}{n_2}}$

10%

Sample < 10% of pop.

Sampling
Distr. of
$\overline{X}_1 - \overline{X}_2$

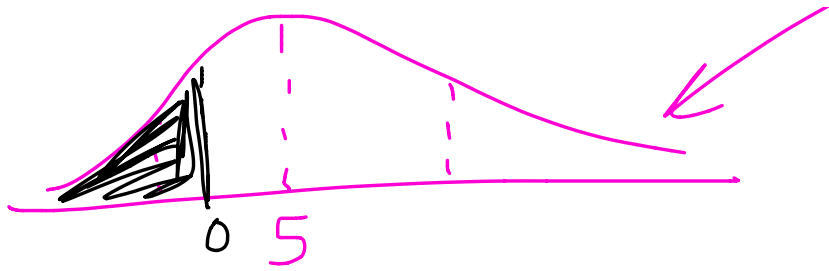$\sqrt{\dfrac{\sigma_1^2}{n_1} + \dfrac{\sigma_2^2}{n_2}}$

$\mu_1 - \mu_2$

Potato Chip

Shape: population normally
distributed; sample
normally distributed.

center: $180 - 175 = 5g$

spread: std dev $= \sqrt{\dfrac{25^2}{20} + \dfrac{30^2}{20}} = 8.73g$

0 5

$$P\left(\bar{X}_c - \bar{X}_r < 0\right)$$

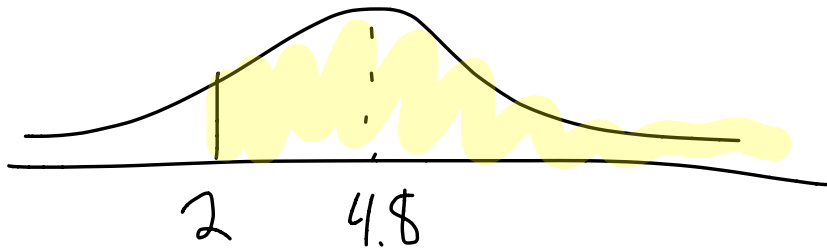$$z = \frac{0-5}{8.73} = -0.57$$

$$p\text{-value} = 0.28$$

This is not a surprising result. The potatoes from Riderwood would have a mean greater than that of Camberely about 28% of the time.

P. 652 #36

10 min.

3.75 → spread
4.8 → center

2   4.8

$$Z = \frac{2 - 4.8}{3.75} = -0.75$$

prob = 0.7734

t-values → formula

lesser of $n_1 - 1$ & $n_2 - 1$