1) A

$\hat{p} = .63$

$\hat{q} = .37$

- SRS – stated
- Can safely Assume that Pope pop ≥ 1000
- $.37(100) = 37 > 10$

One prop z-interval

$.63 \pm \sqrt{\frac{(.63)(.37)}{100}}$

$(.54, .72)$

With 95% confidence the actual proportion of PHS students who have seen the office is between .54 and .72

B) Since .74 is not in the interval there is sufficient evidence to conclude that PHS may not follow national proportion.

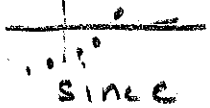
2A)

Want 90% CI for μ

Assume SRS

Also safe to assume ≥ 140 brands of yogurt

normal plot of data



since rel. error data relatively normal

t-interval for μ

$(136.7, 179.0)$

With 90% confidence the mean number of calories for yogurt is between 136.7 and 179.0

B) Since 120 is not in our interval we have evidence that the diet guide may be wrong.

3) $\hat{p} = .62$

$\hat{q} = .38$

$(.38)(50) = 19$

Assume SRS

Events are independent

$$.62 \pm 2.576\sqrt{\frac{(.62)(.38)}{50}}$$

$(.44, .80)$

With 99% confidence Coach Jones proportion of made F.T's is btwn .44 and .80

3) Since .7 is in the interval, .7 is a plausible value for p. we do NOT have sufficient evidence that Coach Jones is not being truthful.

Sample Size

1) $$n = \left[\frac{2.326(6.4)}{2.7}\right]^2 \approx \boxed{31}$$

2) $$n = \left[\frac{1.96\sqrt{(.69)(.31)}}{.035}\right]^2 \approx \boxed{671}$$

3) $$n = \left[\frac{2.326\sqrt{.25}}{.03}\right]^2 \approx \boxed{1503}$$