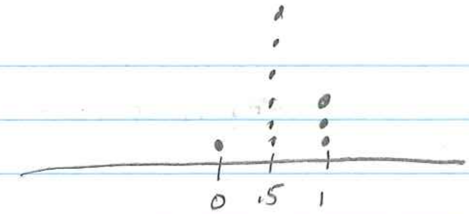
# Handout Practice CH9

(9)

| | QS | %F | | QS | %F |
|---|---|---|---|---|---|
| AB | = 7.5 | 1/2 | CD | = 8½ | 1/2 |
| AC | = 10 | 1/2 | CE | = 9.5 | 1/2 |
| AD | = 8.5 | 2/2 | DE | = 8 | 2/2 |
| AE | = 9.5 | 2/2 | | | |
| BC | = 7.5 | 0/2 | | | |
| BD | = 6 | 1/2 | | | |
| BE | = 7 | 1/2 | | | |



proportion Female
n=2

(6) size 20
(14) For one sample of 250/ 16yo Females the mean was 62.5
(d) majority of means are Btwn 63.5 and 64.5, it would be unusual to get a sample mean greater than 64.7in.

(20) RW¹ WS⁵
RS¹ WR₂⁵
RR₂¹ SR₂⁸

sample min is not unbiased
B/C R₂/20 left out of analysis

(24) $\hat{p}$ is a fair estimate of what we can infer about a population (this is unbiased)

(25) (a) ii + iii B/C p is very close to the mean $\hat{p}$ of the graph
(b) ii does the best job as data is close to that average

(26) (C) is Best answer

(28) (a) smaller sample has more variability

(29) (b)

(30) (C)

(33) $\hat{p} = 55\%$

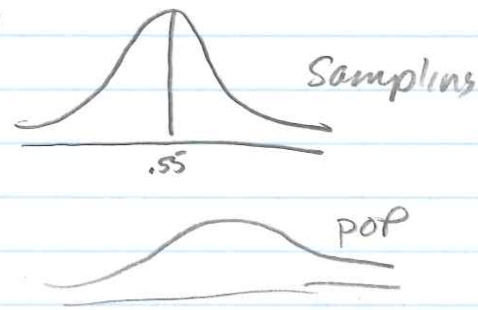
5000 people in a district is reasonable

(b) $\sqrt{\frac{p(1-p)}{n}} = \sqrt{\frac{(.55)(.45)}{500}} = \boxed{.0222 = \sigma_{\hat{p}}}$

500 = 10% X

5000

(c) Shape is symmetric But much thiner than pop. dist B/c SD is smaller




(35) (a) $\mu_{\hat{p}} = \boxed{.20}$

(b) $30 = 10\% x$ => 300 shuttles in Large bag

$\sigma_{\hat{p}} = \sqrt{\frac{(.20)(.80)}{30}} = \boxed{.091}$

(c) Skinny Bell Shape

(41) (a) $\mu_{\hat{p}} = \boxed{.70}$

(b) $\sqrt{\frac{(.70)(.30)}{1012}} = \boxed{.0144}$ US pop is clearly large enough to support 10% rule

(c) Check $np = 1012(.70) = 708.4 \geq 10$ ✓

$nq = 1012(.30) = 303.6 \geq 10$ ✓

(d) $P(\hat{p} \leq .67)$ normalcdf(-∞, .67, .70, .0144)

$P(\hat{p} \leq .67) = \boxed{.0186}$ which is pretty unusual if 70% of pop drink the milk

(57) (a) $P(x < 295)$ = normalcdf (-∞, 295, 298, 3) = $\boxed{.1587}$

(b) n=6

$P(\bar{x} < 295)$ = normalcdf (-∞, 295, 298, 1.22)

$\sigma_{\bar{x}} = \frac{3}{\sqrt{6}} = 1.22$ $P(\bar{x} < 295) = \boxed{.007}$

(60) (a) sampling distribution will be normal B/c pop dist. normal

(b) $P(9 \le \bar{x} \le 10)$ = normalcdf(9, 10, 9.5, .447) = $\boxed{.7367}$

$\sigma_{\bar{x}} = \frac{1}{\sqrt{5}} = .447$

(c) $\sigma_{\bar{x}} = \frac{1}{\sqrt{50}} = .1414$ normalcdf(9, 10, 9.5, .1414) = $\boxed{.9996}$

the larger sample is Better B/c distribution shows most means fall close to the pop mean of 9.5

(61) (a) $P(\bar{x} \le 42.2)$ normalcdf(-∞, 42.2, 48, 2.899) = $\boxed{.0227}$
2.27%

$\sigma_{\bar{x}} = \frac{8.2}{\sqrt{8}} = 2.899$

(b) with about 2% of Battery life is Less than 42.2 mo while this is a low percent, it would seem Likely that a higher % would Be between 42.2 and 48 But less than 48mo since it follows a normal distribution - Hower just as many would be above 48% so its Likely not overstated.

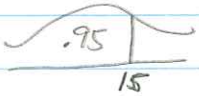
$P(42.2 \le \bar{x} \le 48) = 47.7\%$

$P(48 \le x \le 54.2) = 48\%$

(66) $P(\bar{x} \ge 15)$ normalcdf(15, ∞, 15, 1.423) = .499 or .5

$\sigma_{\bar{x}} = \frac{9}{\sqrt{40}} = 1.423$

on av. 50% will grab \$15 or more

(b) .95 → 


17.34 or \$17.50 to ensure they make money on the game

69 no - the histogram of the distribution of sample means will look more & more normal

73 (b)

74 (a) reduce variability

Back 49 (b)