Please complete #28 and #30 on pages 439 and 440.

28. Yes this is a surprising result because 0.32 is very far from the center of the distribution.

(30) (a) $\mu_{\hat{p}} = 0.15$ The mean of the sampling distribution is the same as the population proportion.

(b) $\sigma_{\hat{p}} = \sqrt{\frac{p(1-p)}{n}}$

$\sigma_{\hat{p}} = \sqrt{\frac{0.15 \cdot .85}{25}} \approx 0.0714$

It is safe to assume there are more than 250 candies in the machine $\therefore$ the 10% condition is met.

(c) $np \rightarrow 25(.15) = 3.75$

$3.75 < 10$ The sampling distribution is not normal (the condition is not met.)

d) $n = 75$

Normal? np

$75(.15) = 11.25$

The condition is met $\therefore$ the sampling distribution is normal.

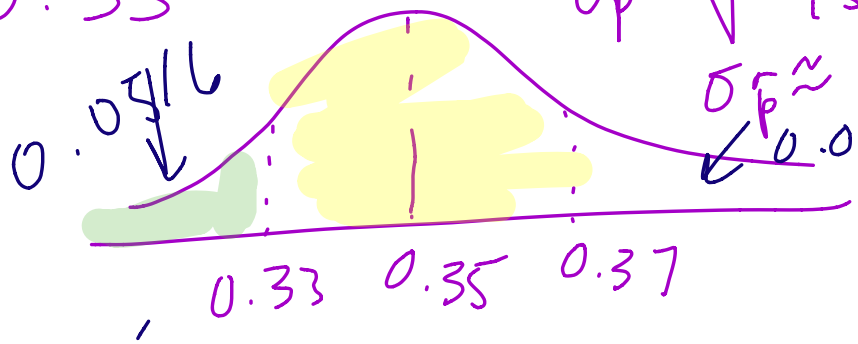
$$\sigma_{\hat{p}} = \sqrt{\frac{.15(.85)}{75}} \approx 0.0412$$

Normal conditions are met ✓

$\hat{p} = 0.35$

$\sigma_{\hat{p}} = \sqrt{\frac{.35 \cdot .65}{1500}}$

$\sigma_{\hat{p}} \approx 0.0123$



$$z = \frac{0.33 - 0.35}{0.0123} = -1.63$$

$1 - 2(.0516) \approx 0.8968$

About 90% of all SRSs of size 1500 would give a value within 2 percentage points of the actual population.

Do problem #40 on p. 441.

~~STATS NOTES end here~~

~~Identify the vertex:~~

① $y = 6(x-1)^2 + 14$ $(1, 14)$

② $y = 2(x+3)^2 + 7$ $(-3, 7)$

(h, k) (x, y)

③ vt: $(3, 2)$ pt: $(-4, 4)$

put this into an equation (vt. form)

$$y = a(x-h)^2 + k$$

$$4 = a(-4-3)^2 + 2$$

$$4 = a(-7)^2 + 2$$

$$4 = 49\boxed{a} + 2$$

$$2 = 49a$$

$$a = 2/49$$

ex $y = 2x^2 + 12x + 25$

$y = 2(x^2 + 6x) + 25$

$y = 2(x^2 + 6x + 9) + 25 - 18$

$y = 2(x + 3)^2 + 7$

$y = 2x^2 + 12x + 25$

$\frac{y - 25}{2} = \frac{2x^2 + 12x}{2}$

$9 + \frac{y - 25}{2} = x^2 + 6x + 9$

$9 + \frac{y - 25}{2} = (x + 3)^2$

$$\frac{y-25}{2} = (x+3)^2 - 9$$

$$y - 25 = 2(x+3)^2 - 18$$

$$y = 2(x+3)^2 + 7$$

$$y = a(x-h)^2 + k$$

$(-3, 7) \rightarrow$ Vertex

$x = -\frac{b}{2a} \rightarrow$ x-coordinate of vertex

$$y = 2x^2 + 12x + 25$$

$$x = \frac{-12}{2 \cdot 2} = \frac{-12}{4} = -3$$

$$y = 2(-3)^2 + 12(-3) + 25$$

$y = 18 - 36 + 25 = 7$

$(-3, 7)$ ✓

$y = -3x^2 - 6x + 1$

Complete the square to put into vertex form.

$\frac{y-1}{-3} = \frac{-3x^2 - 6x}{-3}$

$1 + \_ = \_ - \_$

$-1 \qquad 2$

$1 + \frac{y-1}{-3} = \_ + \_$

$-3\left(\_ - \_ = (x+1)^2 - 1\right)$