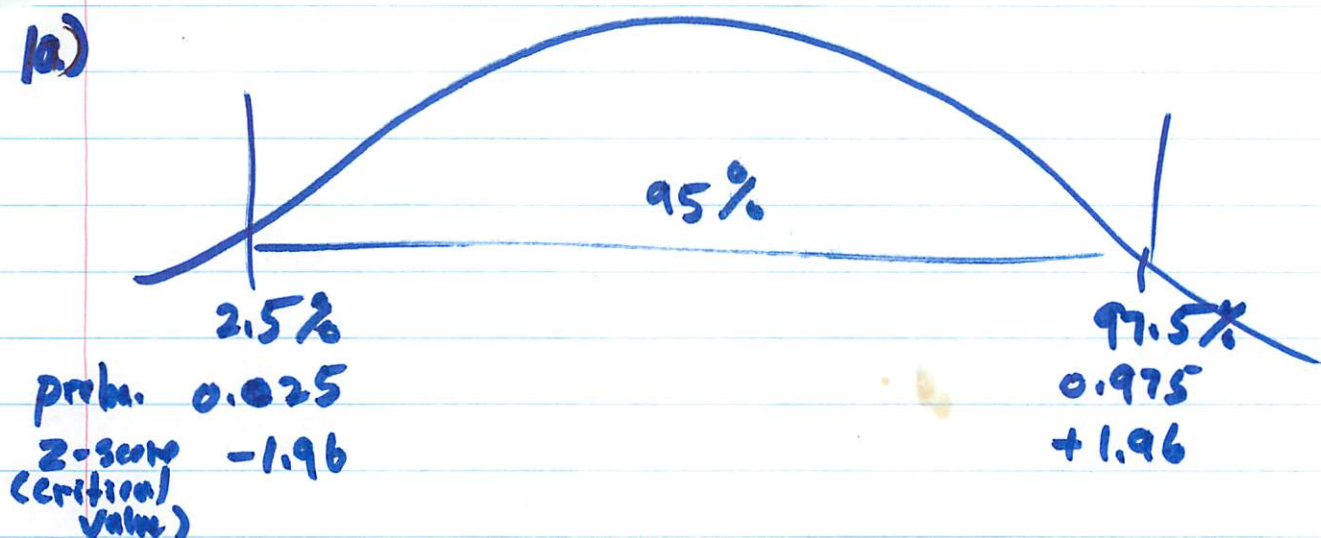


1a)



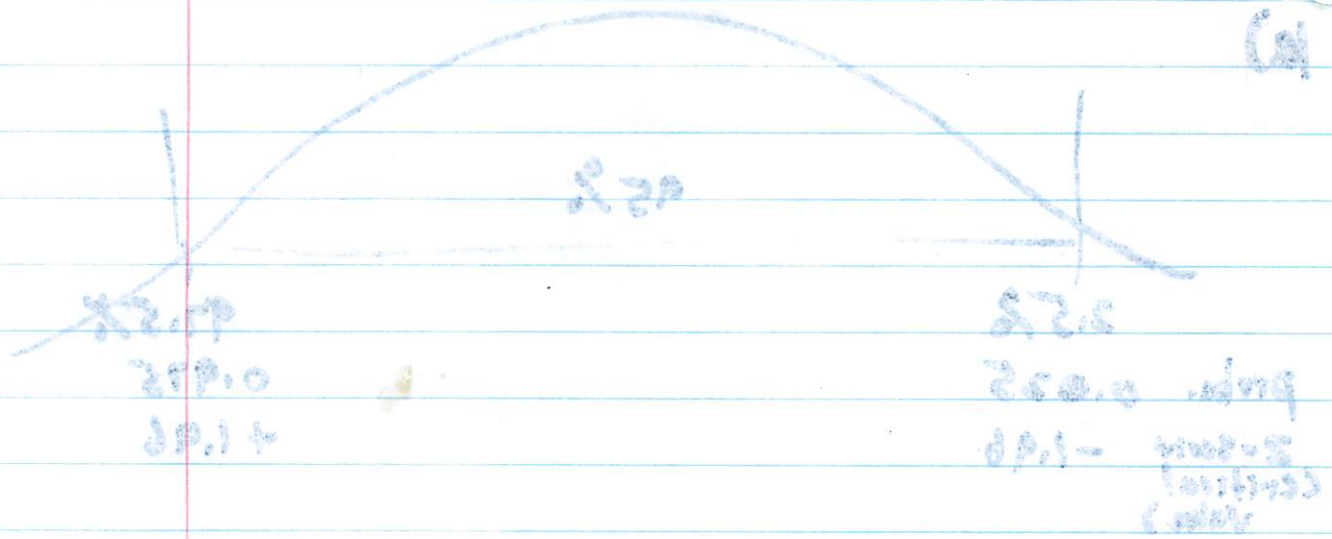
$$\begin{aligned}& \pm 1.96 \sqrt{\frac{(0.25)(0.75)}{100}} \\& \approx \pm 1.96 \sqrt{0.001875} \\& = (\pm 1.96)(0.04330127) \\& = \pm 0.08487049 \\& \approx \pm 8.5\%\end{aligned}$$

$$\begin{aligned}25\% - 8.5\% &= 16.5\% \\25\% + 8.5\% &= 33.5\%\end{aligned}$$

confidence interval:

$$16.5\% \sim 33.5\%$$

Cal



$$\frac{(25.0)(25.0)}{100} \sqrt{10.1 \pm}$$

$$258100.0 \sqrt{10.1 \pm} =$$

$$(1510840.0)(10.1 \pm) =$$

$$15258480.0 \pm =$$

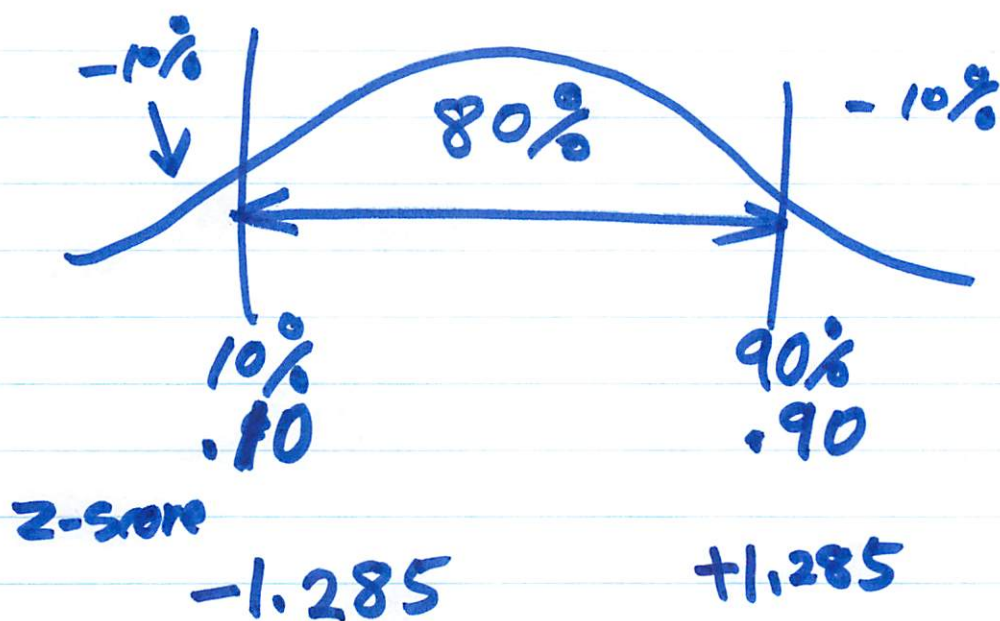
$$\pm 8.2\%$$

$$\begin{aligned} \pm 2.01 &= \pm 8.2\% - \pm 2.5\% \\ \pm 2.5 &= \pm 8.2\% + \pm 2.5\% \end{aligned}$$

confidence interval:

$$\pm 2.55 \sim \pm 2.01$$

16)



$$\pm 1.285 \sqrt{\frac{(.25)(.75)}{80}}$$

$$\approx \pm 1.285 \sqrt{0.00234375}$$

$$\approx (\pm 1.285) (0.048412292)$$

$$\approx \pm 0.062209795$$

$$\approx \pm 6.2\%$$

Confidence interval: 18.8% ~ 31.2%

$$25 - 6.2 \approx 18.8$$

$$25 + 6.2 \approx 31.2$$



285.1+

285.1-

$$\frac{(28.2)(28.2)}{80} \sqrt{285.1 \pm 1.382}$$

$$\frac{28.2 \pm 1.382}{\sqrt{10.00544}} \approx 285.1 \pm 1.382$$

$$(285.1 \pm 1.382) (0.0415583)$$

$$285.1 \pm 0.0570500$$

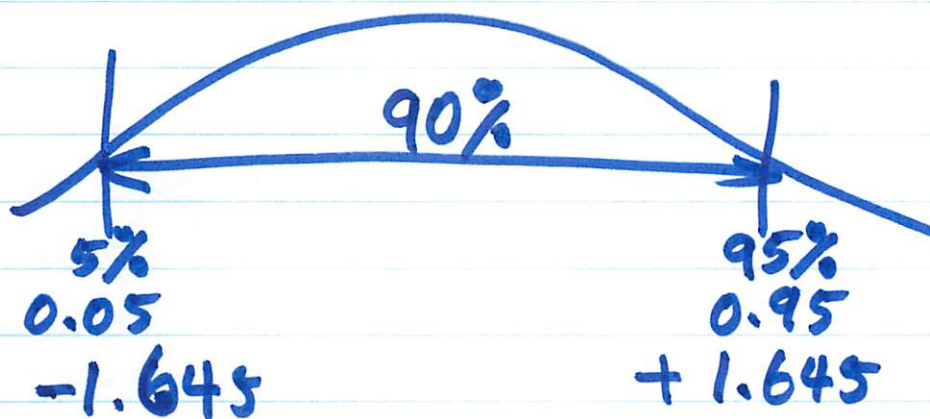
$$285.1 \pm 0.057$$

Confidence interval: 18.8% - 31.2%

$$52 + 0.5 = 52.5$$

$$52 - 0.5 = 51.5$$

2)



critical
value
(z-score)

$$\pm 1.645 \sqrt{\frac{(.375)(.625)}{64}}$$

$$\approx \pm 1.645 \sqrt{0.003662109}$$

$$\approx \pm 1.645 (0.060515362)$$

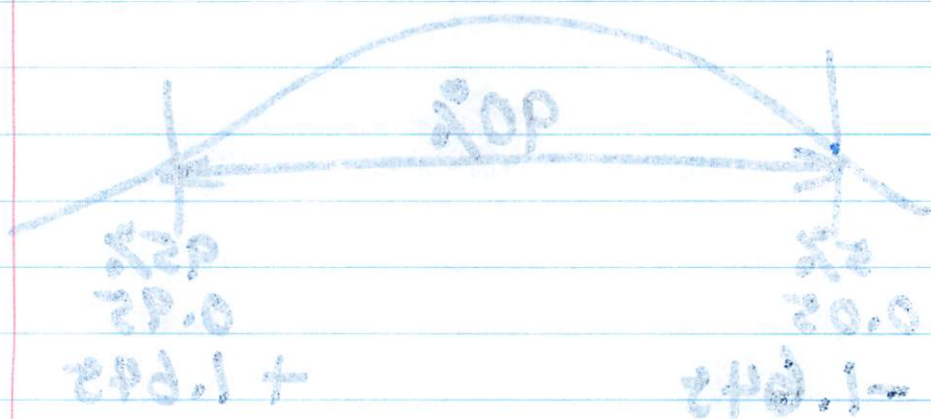
$$\approx \pm 0.09954777$$

$$\approx \pm 10\%$$

Confidence Interval : 27.5% ~ 47.5%

$$37.5\% - 10\% \approx 27.5\%$$

$$37.5\% + 10\% \approx 47.5\%$$



$$\frac{(240.1) \pm 1.96 \times \sqrt{\frac{(240.1)^2}{n}}}{\sqrt{n}}$$

$$240.1 \pm 1.96 \times \sqrt{\frac{(240.1)^2}{n}}$$

$$240.1 \pm 1.96 \times \sqrt{\frac{(240.1)^2}{n}}$$

$$240.1 \pm 1.96 \times \sqrt{\frac{(240.1)^2}{n}}$$

$$240.1 \pm 1.96 \times \sqrt{\frac{(240.1)^2}{n}}$$

Confidence Interval : 240.1 $\pm$ 1.96

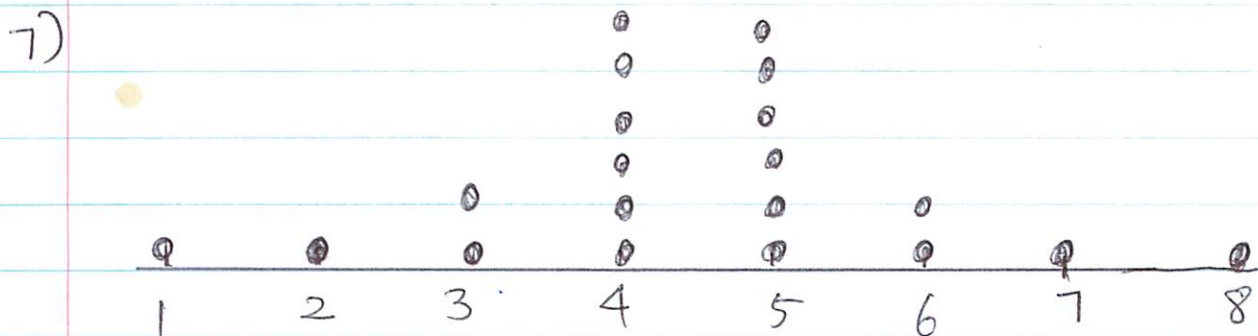
$$240.1 - 1.96 \times \sqrt{\frac{(240.1)^2}{n}}$$

$$240.1 + 1.96 \times \sqrt{\frac{(240.1)^2}{n}}$$

6) option 1) Use ~~ten~~ random integers,
where 001 - 060 make
061 - 100 missed.

option 2) use ten random integers,
where 00 - 59 make
60 - 99 missed.

option 3) use ten random integer,
where 0 - 5 make
6 - 9 missed



8) $\frac{4}{20} \approx 20\%$

9) It's ~~very~~ unlikely that 60% shooter
makes 6 or more shots in 20 attempts.

16)

$$\pm 1.96 \sqrt{\frac{(0.30)(0.70)}{500}}$$

$$\approx \pm 1.96 \sqrt{0.00042}$$

$$\approx \pm 1.96 (0.020493902)$$

$$\approx \pm 0.040$$

$$\approx \pm 4\%$$

$$30\% \pm 4\% = 26\%$$

$$30\% + 4\% = 34\%$$

$$26\% \sim 34\%$$

$$\frac{(0.5)(0.5)}{0.01} \sqrt{1.44 \pm}$$

(1)

$$54000.0 \sqrt{1.44 \pm}$$

$$\begin{aligned} & (1008000.0) \sqrt{1.44 \pm} \\ & 0.0001 \pm \\ & 0.1 \pm \end{aligned}$$

$$0.0001 = 1.44 = 0.0001$$

$$1.44 = 1.44 + 0.0001$$

$$0.1 \pm 0.0001$$

11) null hypothesis

$$H_0 : \mu = 200$$

alternate hypothesis

$$H_a : \mu < 200$$

$$0.05 = \bar{x} : H_0$$

alternative hypothesis (1)

$$0.25 > \bar{x} : H_1$$

alternative hypothesis

$$12) \pm 0.02 = \pm 2.325 \sqrt{\frac{(0.8)(0.2)}{n}}$$

$$0.02 = (2.325) \sqrt{\frac{(0.8)(0.2)}{n}}$$

$$\frac{0.02}{2.325} = \sqrt{\frac{(0.8)(0.2)}{n}}$$

$$(0.008602151)^2 = \sqrt{\frac{(0.8)(0.2)}{n}}^2$$

$$0.000073997 \quad \cancel{= \frac{(0.8)(0.2)}{n}}$$

$$\frac{0.000073997n}{0.000073997} = \frac{(0.8)(0.2)}{0.000073997}$$

$$n = 2162.249821$$

$$n \approx 2162$$

$$\frac{(5.0)(8.0)}{50} \sqrt{258.2} = 10.0 \pm (A)$$

$$\frac{(5.0)(8.0)}{50} \sqrt{258.2} = 10.0$$

$$\frac{(5.0)(8.0)}{50} \sqrt{258.2} = 10.0$$

$$\frac{(5.0)(8.0)}{50} \sqrt{258.2} = (12100000.0)$$

$$\frac{(5.0)(8.0)}{50} \sqrt{258.2} = 12100000.0$$

$$\frac{(5.0)(8.0)}{50} \sqrt{258.2} = 12100000.0$$

$$12100000.0 = 12100000.0$$

$$12100000.0 = 12100000.0$$

14)

$$a) \frac{10}{50} = 0.2 \quad 20\%$$

$$b) \frac{30}{40} = 0.75 \quad 75\%$$

20% completion rate is way lower than
70% of his completion rate.

$$\frac{1}{2} \times 2.0 = \frac{1}{2} (2) (1)$$

$$\frac{1}{2} \times 2.0 = \frac{1}{2} (2) (1)$$

with most of the other students in the
the north of the city.

15) a)

$$\sqrt{\frac{p(1-p)}{n}}$$

$$= \sqrt{\frac{(0.3)(0.7)}{520}}$$

$$= \sqrt{0.000403846}$$

$$\approx 0.02009592$$

$$\approx 0.02$$

15) b)

$$\pm 1.96 \sqrt{\frac{p(1-p)}{n}}$$

$$\approx (\pm 1.96)(0.02)$$

$$\approx 0.0392$$

$$\approx 3.92\%$$

$$\textcircled{a} \quad 30\% - 3.92\% = 26.08\%$$

$$30\% + 3.92\% = 33.92\%$$

$$26.08\% \sim 33.92\%$$

$$(9-139)$$

(3)

$$10 \quad 1$$

$$(1.0)(8.0) \\ 8.0$$

$$10250000.0$$

$$10250000.0$$

$$20.0$$

$$(9-139)$$

$$10.1 \pm$$

(42)

$$(20.0)$$

$$(10.1 \pm)$$

$$10.1 \pm$$

$$10.1 \pm$$

$$10.1 \pm = 10.1 \pm - 10.1$$

Q

$$10.1 \pm = 10.1 \pm + 10.1$$

$$10.1 \pm \sim 10.1 \pm$$