

Chapters 16, 17 leftovers?  
 Ch 18 ✓ B3, 5 C8, 2 Rev 2, 4

Exam 3 Next thur. 4/9

12:30 - 3:30

on Canvas

mix of mult. choice  
essay question  
fill-in-the-blank } total count?  
TBA

Ans: 9 ✓

Ans: +9 ✓ +59 ✓

Next Class antg: Tues 4/7

Review Ch 13-18

→ main course web page

Ch 16-18 practice problems / solutions

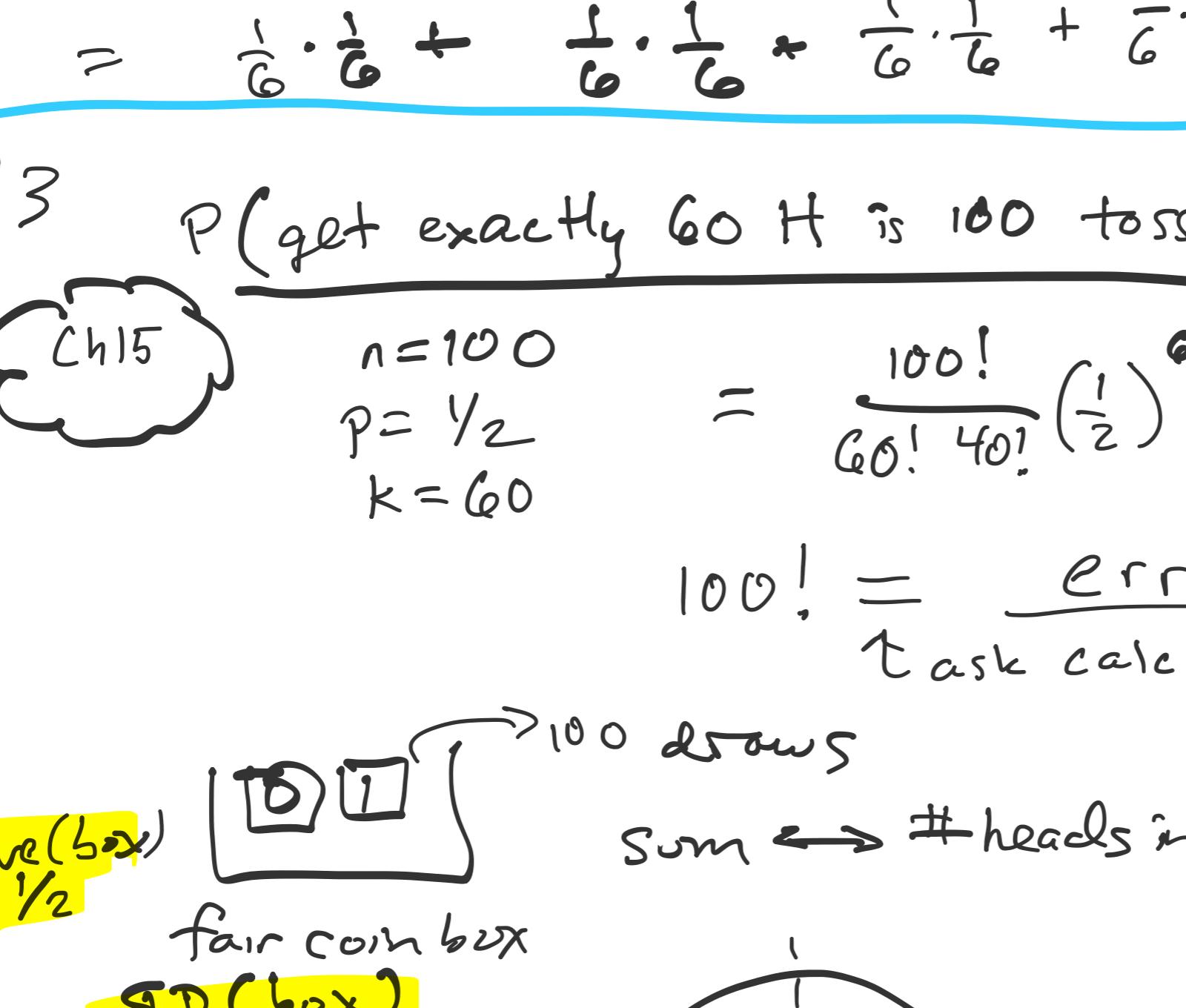
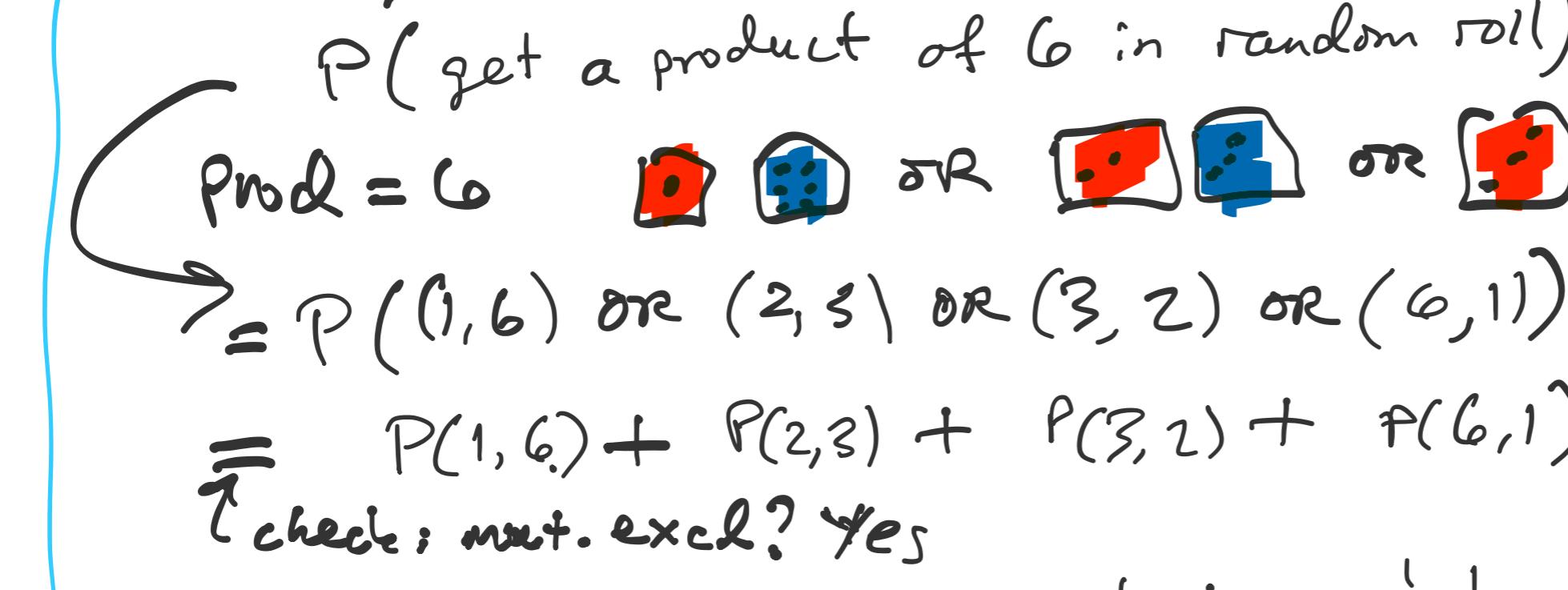
Ch 18 A4 p 314

product of numbers on 2 dice  
(mult)

$$(a) \therefore = 1 \cdot 3 = 3$$

$$\therefore = 2 \cdot 3 = 6$$

(b) see p 313



B3 P(get exactly 60 H in 100 tosses) = ?

$$\text{Ch 15} \quad n=100 \quad p=\frac{1}{2} \quad k=60 \quad = \frac{100!}{60! 40!} \left(\frac{1}{2}\right)^{60} \cdot \left(\frac{1}{2}\right)^{40} = ? \text{ STUCK}$$

$$100! = \frac{\text{error}}{\text{task calculator}}$$

$\text{ave(box)} = \frac{1}{2}$   $\text{SD(box)} = \sqrt{\frac{1}{2} \cdot \frac{1}{2}} = \frac{1}{2}$

$$\text{Shortcut Formula} \quad = (1-0) \sqrt{\frac{1}{2} \cdot \frac{1}{2}} = \frac{1}{2}$$

$$\text{Ch 17} \quad \text{P 298} \quad \text{ave(sum)} = \frac{1}{2} \cdot 100 = 50$$

$$\text{sum} \leftrightarrow \# \text{heads in all draws}$$

$$\text{SD(sum)} = \text{SD(box)} \sqrt{100} = \frac{1}{2} \cdot 10 = 5$$

$$z_R = \frac{60.5 - 50}{5} = 2.1$$

$$z_L = \frac{59.5 - 50}{5} = 1.9$$

$$z = \begin{array}{|c|c|c|c|} \hline & 1.9 & 2.1 & \\ \hline \end{array} \quad z = \begin{array}{|c|c|c|c|} \hline & 94.26 & 96.43 & \\ \hline \end{array}$$

$$\text{Ans: } \frac{96.43 - 94.26}{2} \approx 1\%$$

B5

$$\text{① } \text{ave(box)} = \frac{1}{2} \quad \text{Expected sum} = \frac{1}{2} \cdot 10000 = 5000$$

$$\text{② } \text{SD(box)} = \sqrt{\frac{1}{2} \cdot \frac{1}{2}} = \frac{1}{2} \quad \text{SE sum} = \frac{1}{2} \sqrt{10000} = 50$$

$$\text{P(get 4900 to 5050 H)} = ?$$

$$z_R = \frac{5050 - 5000}{50} = 1$$

$$z_L = \frac{4900 - 5000}{50} = -2$$

$$z = \begin{array}{|c|c|c|c|} \hline & 1 & 2 & \\ \hline \end{array} \quad \text{Area} = 68.27$$

$$\text{Ans: } \frac{1}{2} 68 + \frac{1}{2} 95 \approx 81, 81.5, 82 \%$$

C2



$$\text{P}(0) = \text{P}(1) = \frac{1}{2}$$

①

$$\left[ \begin{array}{|c|c|c|c|} \hline & 0 & 1 & \dots & 10 \end{array} \right] \quad \text{P(H)} = \frac{1}{10}$$

$$1H \quad 9 Tails \quad \text{Ch 15 method}$$

$$\text{② ave(box)} = \frac{1}{10} \quad \text{Ch 18 way}$$

$$\text{SD(box)} = (1-0) \sqrt{\frac{1}{10} \cdot \frac{9}{10}} = \frac{3}{10} = 0.3$$

$$\text{③ Expected sum} = \frac{1}{10} \cdot 400 = 40 \quad \text{SE sum} = (0.3) \sqrt{400} = 6$$

$$z = \begin{array}{|c|c|c|c|} \hline & 1 & 2 & \\ \hline \end{array} \quad \text{Area} = 68.27$$

$$\text{Ans: } 7\% \approx 8\% \text{ a little under 8\%}$$

Ch 15 method

$$n = 400 \quad k = 40 \quad P = \frac{1}{10}$$

$$\text{P(exactly 40 in 400)} = ?$$

$$z = \begin{array}{|c|c|c|c|} \hline & 1 & 2 & \\ \hline \end{array} \quad \text{Area} = 7-8\%$$

$$\text{Ans: } 7\% \approx 8\% \text{ a little under 8\%}$$