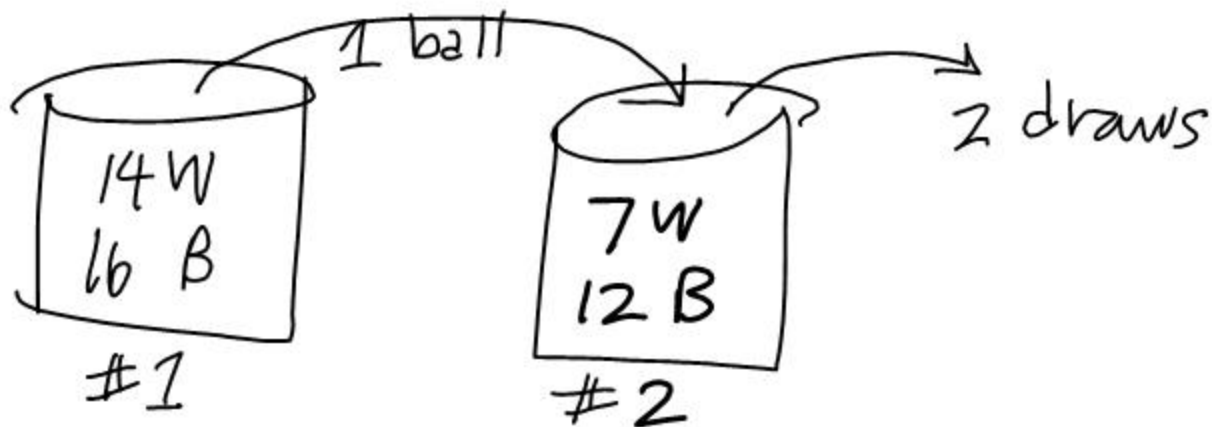


#4



W  $\frac{14}{30}$  Urn #2: 8 W, 12 B

$$P(B, B) = \frac{\binom{12}{2}}{\binom{20}{2}} = \frac{66}{190}$$

$\frac{77}{475}$

B  $\frac{16}{30}$  Urn #2: 7 W, 13 B

$$P(B, B) = \frac{\binom{13}{2}}{\binom{20}{2}} = \frac{39}{95}$$

$\frac{104}{475}$

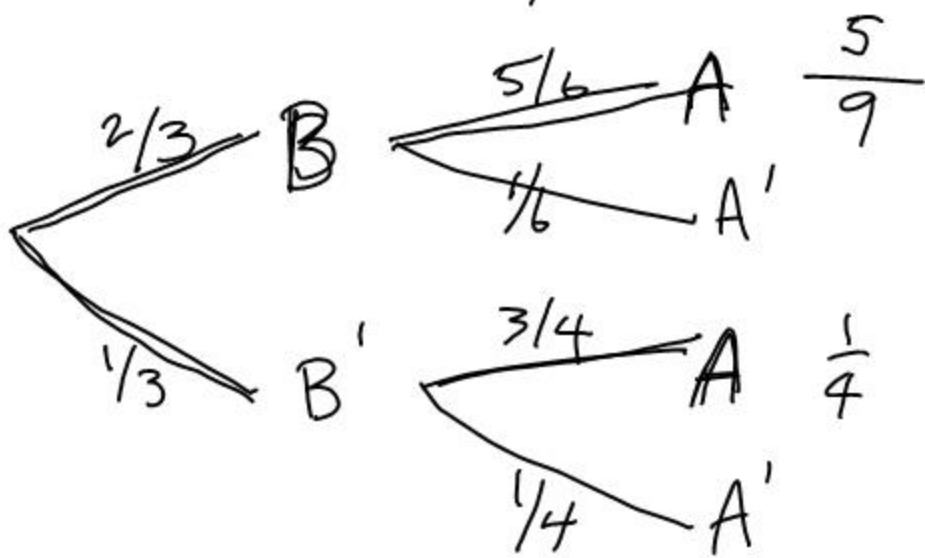
$$P(B, B) = \frac{181}{475}$$

$$(a) P(\text{1st } W | W, W) = \frac{P(\text{1st } W \cap W, W)}{P(W, W)}$$

HW

---

#3  $P(B) = \frac{2}{3}$ ,  $P(A|B) = \frac{5}{6}$ ,  $P(A'|B') = \frac{1}{4}$



$$P(A) = \frac{5}{9} + \frac{1}{4} = \frac{29}{36}$$

$$P(B|A) = \frac{P(B \cap A)}{P(A)} = \frac{\frac{5}{9} \cdot \frac{2}{3}}{\frac{29}{36}} = \frac{20}{29}$$

$$P(B'|A') = \underline{\hspace{2cm}}$$

# Computing Variance + Standard deviation

Find the variance of 2, 3, 5, and 6

$X$	$X - \bar{X}$ deviation from the mean	$(X - \bar{X})^2$
2	-2	4
3	-1	1
5	1	1
6	2	4
		<hr/> 10

average squared deviation:  $\frac{10}{4} = \underline{2.5}$

↑ measures of dispersion  
variance =  $\sigma^2$  ↑

standard deviation =  $\sigma = \sqrt{\text{variance}}$

2<sup>nd</sup> time:

Find the variance: 2, 3, 5, 6

$$\frac{2^2 + 3^2 + 5^2 + 6^2}{4} - \left( \frac{2+3+5+6}{4} \right)^2$$

$\sigma^2 =$  mean of the squares - square of the mean

Another measure of spread:

Interquartile Range (IQR)

EX.  $\overbrace{2, 3, 3, 9}^{1, 2, 3, 4} \mid 10, 13, 15, 18, 20$

median is at  $\frac{n+1}{2}$

$\overbrace{2, 3, 3, 9}^3$   
= the 1<sup>st</sup> quartile ( $Q_1$ )  
= 25<sup>th</sup> percentile

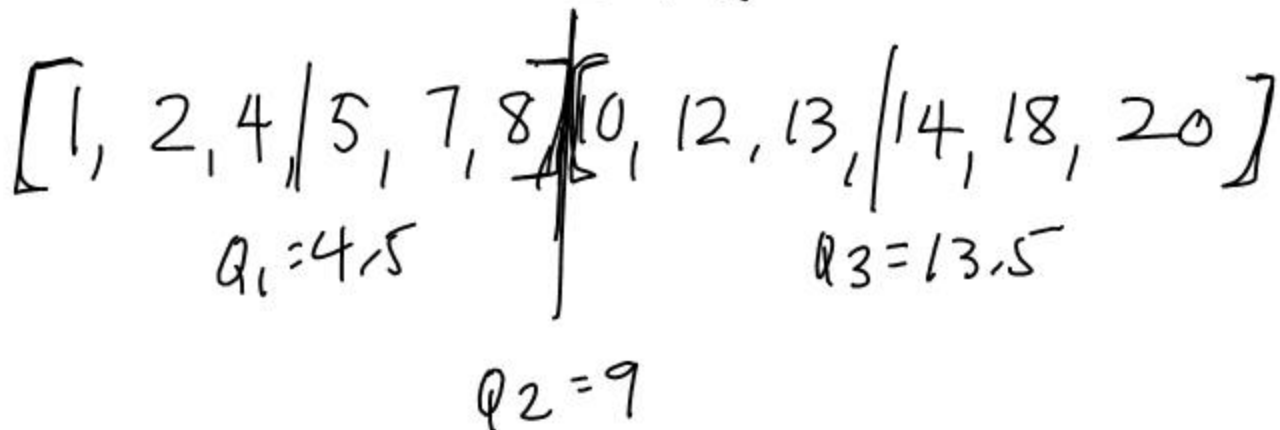
median  
= the 2<sup>nd</sup> quartile ( $Q_2$ )  
= 50<sup>th</sup> percentile

16.5  
=  $Q_3$   
= 75<sup>th</sup> percentile

$$\boxed{IQR = Q_3 - Q_1}$$

← Range of the middle 50%

Ex. Find the IQR



$$\text{IQR} = 13.5 - 4.5 = 9$$

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HW    6M # 4-9, 10 (if needed)

6C # 1

6D # 1-3