

7.

	Shorts	No Shorts	Total
Hat	10	50	60
No Hat	30	10	40
	40	60	100

- a. How many total outcomes are possible?      b.  $P(\text{Shorts}) =$
- c.  $P(\text{Hat}) =$       d.  $P(\text{Shorts and Hat}) =$
- e.  $P(\text{Shorts}|\text{Hat}) =$
- f. Are wearing shorts and wearing a hat independent events? Why or why not?
- g.  $P(\text{not Shorts or not Hat}) =$       h.  $P(\text{not Hat}|\text{Shorts}) =$

8.

Data gathered on the shopping patterns during the months of April and May of high school students from Peanut Village revealed the following. 38% of students purchased a new pair of shorts (call this event  $H$ ), 15% of students purchased a new pair of sunglasses (call this event  $G$ ), and 6% of students purchased both a pair of shorts and a pair of sunglasses.

- a) Draw the Venn diagram for this data
- b) Are buying shorts and buying sunglasses independent? Why or why not?

Name: Leaf

	Hat	No Hat	
Shorts	10	30	40
No Shorts	50	10	60
Total	60	40	100

Hat + Shorts  
 Hat + No Shorts  
 No Hat + Shorts  
 No Hat + No Shorts

7.

a. How many total outcomes are possible?  $\frac{40}{100} = P(\text{Shorts}) = 0.4$  or 40%

c.  $P(\text{Hat}) = \frac{60}{100}$  or 60% or 0.6 or 60% d.  $P(\text{Shorts and Hat}) = \frac{10}{100}$  or 0.1 or 10%

e.  $P(\text{Shorts|Hat}) = \frac{10}{60}$  or 0.17 or 17%

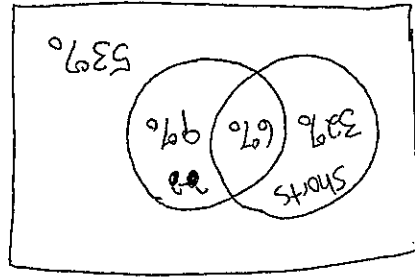
f. Are wearing shorts and wearing a hat independent events? Why or why not? dependent,  $P(\text{Shorts}) \neq P(\text{Shorts|Hat})$

g.  $P(\text{not Shorts or not Hat}) = \frac{90}{100}$  or 0.9 or 90% h.  $P(\text{not Hat|Shorts}) = \frac{40}{30}$  or 0.75 or 75%

8.

Data gathered on the shopping patterns during the months of April and May of high school students from Peanut Village revealed the following. 38% of students purchased a new pair of shorts (call this event H), 15% of students purchased a new pair of sunglasses (call this event G), and 6% of students purchased both a pair of shorts and a pair of sunglasses.

a) Draw the Venn diagram for this data



b) Are buying shorts and buying sunglasses independent? Why or why not?

$$P(\text{Shorts and Sunglasses}) = 0.06$$

$$P(\text{Shorts}) \cdot P(\text{Sunglasses}) = 0.38 \cdot 0.15 = 0.057$$

Close enough that the difference could easily be rounding error. Independent.

9.