

AP Statistics: Chapter 5 Practice Free Response exam

1. Below is a two-way table that describes responses of 120 subjects to a survey in which they were asked, “Do you exercise for at least 30 minutes four or more times per week?” and “What kind of vehicle do you drive?”

		Car type			Total
		Sedan	SUV	Truck	
Exercise?	Yes	25	15	12	52
	No	20	24	24	68
Total		45	39	36	120

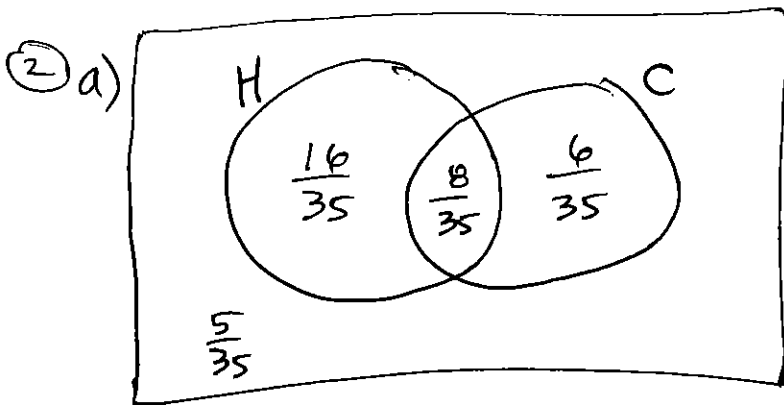
Suppose one person from this sample is randomly selected.

- What is the probability that the person selected drives an SUV?
 - What is the probability that the person selected drives either a sedan or a truck?
 - What is the probability that the person is a non-exerciser that drives a sedan?
 - What is the probability that the person is a non-exerciser or drives a sedan?
 - What is the probability that the person selected drives a truck given that they exercise?
2. There are 35 students in Ms. Ortiz’s Calculus class. One day, 24 students turned in their homework and 14 turned in test corrections. Eight of these students turned in both homework and test corrections. Suppose we randomly select a student from the class.
- Complete a Venn diagram below so that it describes the chance process involved here. Let H = the event “turned in homework” and C = the event “turned in corrections.”
 - Using your Venn diagram, determine the probability that a student did not turn in homework or their test corrections.
 - Using your Venn diagram, determine the probability that a student turned in homework given that they turned in test corrections.
3. You have been handed a bag containing four \$1 bills and two \$5 bills. You will reach in the bag (blindly) and select two bills at random.
- Sketch a complete tree diagram to represent the outcomes of this random selection.
- Use your tree diagram to answer the following:**
- What is the probability that you end up with \$6?
 - What is the probability that the two selected bills are the same dollar amount?

Solutions to Chap 5 Practice Test

① a) $\frac{39}{120} = .325$ b) $\frac{45+36}{120} = .675$ c) $\frac{20}{120} = .167$

d) $\frac{25+20+24+24}{120} = .775$ e) $\frac{12}{52} = .231$



b) $\frac{5}{35} = .143$

c) $\frac{8}{14} = .571$

③ a)

1st	2nd	
$\frac{4}{6}$ \$1	$\frac{3}{5}$ \$1 = \$2	$\rightarrow \frac{4}{6} \cdot \frac{3}{5} = \frac{12}{30} = .4$
	$\frac{2}{5}$ \$5 = \$6	$\rightarrow \frac{4}{6} \cdot \frac{2}{5} = \frac{8}{30} = .267$
$\frac{2}{6}$ \$5	$\frac{4}{5}$ \$1 = \$6	$\rightarrow \frac{2}{6} \cdot \frac{4}{5} = \frac{8}{30} = .267$
	$\frac{1}{5}$ \$5 = \$10	$\rightarrow \frac{2}{6} \cdot \frac{1}{5} = \frac{2}{30} = .067$

b) $\frac{8}{30} + \frac{8}{30} = \frac{16}{30} = \frac{8}{15} = .533$

c) $\frac{12}{30} + \frac{8}{30} = \frac{20}{30} = \frac{2}{3} = .667$
 ~~$\frac{20}{30} = \frac{2}{3} = .667$~~
 $.467$