

# STATISTICS FINAL REVIEW QUESTIONS

## ADDITION

For #1-4 use the following information.

### DISTRIBUTION OF GRADES OF CALCULUS STUDENTS AT SORRENTINO MEMORIAL HIGH SCHOOL

A	B	C	D	F
12%	20%	36%	24%	8%

1. What is the probability that 3 randomly chosen students earned As in Calculus?
2. What is the probability that 3 randomly chosen students passed the class (that is all 3 did not earn Fs)?
3. What is the probability that out of 3 randomly chosen students at least 1 passed Calculus?
4. A student earns Pitt credits if he/she earns at least a C grade.
  - (A) What is the probability that a randomly selected student passed the class?
  - (B) Assume that 6 students are chosen at random.
    - (i) What is the probability that exactly 3 students earn Pitt credit?
    - (ii) What is the probability that more than 3 students earned Pitt credits?
    - (iii) What is the mean and standard deviation of the number of students who earned Pitt credits?

**For #5-8, assume the following information.**

You take a pop quiz, for which you did not study. There are 10 multiple-choice questions on the quiz, each of which has 4 choices. Having not studied, you randomly guess on the questions.

5. What is the probability that you answer any one of the questions correctly?
6. What is the probability of answering exactly 3 of the questions correctly?
7. What is the probability of passing the quiz (that is answering at least 6 questions correctly)?
8. What is the mean and standard deviation of the number of questions you would answer correctly under these conditions?

9. *Aquafina* asks a sample of regular bottled-water drinkers about the number of bottles they drink in a day. The results are shown in the table below.

(A) What is the probability that a randomly chosen person drinks at least 6 bottles per day?

(B) What is the probability that a randomly chosen person drinks no more than 5 bottles per day?

(C) On average, a the people from this sample drinks \_\_\_\_\_ bottles per day, give or take \_\_\_\_\_ bottles.

NUMBER OF BOTTLES (PER DAY)	PROBABILITY
1	0.01
2	0.12
3	0.20
4	0.30
5	0.18
6	0.10
7	0.05
8	0.02

**10.** The results below show data on the number of hours of TV that are watched per day.

**ADULTS**

$$\begin{aligned}\bar{x} &= 4.6 \\ s &= 1.136 \\ n &= 85\end{aligned}$$

**CHILDREN**

$$\begin{aligned}\bar{x} &= 3.8 \\ s &= 1.546 \\ n &= 60\end{aligned}$$

Test the claim that children watch less TV on average than adults.

11. The weights of people from various races are shown below.

WHITE	AFRICAN-AMERICAN	LATINO	ASIAN
$\bar{x}_1 = 146.2$	$\bar{x}_2 = 129.4$	$\bar{x}_3 = 137.8$	$\bar{x}_4 = 119.6$
$s_1 = 12.8$	$s_2 = 13.2$	$s_3 = 11.1$	$s_4 = 10.6$
$n_1 = 22$	$n_2 = 27$	$n_3 = 16$	$n_4 = 20$

(A) Complete the ANOVA table below.

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	P-VALUE
Race					
Error		314259.2		XXXX	XXXX
Total		349745	XXXX	XXXX	XXXX

(B) Based on the data, does there appear to be a relationship between race and average weight?