

Instructions: Answer each question completely. Show all work for any computational questions.

1. The letter grade distributions for a particular course are as shown in the table.

Outcome	A=4	B=3	C=2	D=1	E=0
Probability	0.15	0.30	0.25	0.20	0.10

To simulate this probability distribution, we will let numbers 00-14 represent receiving an A, 15-44 represent receiving a B, 45-69 represent receiving a C, 70-89 represent receiving a D, and 90-99 represent receiving an E. Use the list of random numbers below to simulate the grades a class of 20 students might receive.

93515 87791 10801 14624 00626 33066 54898 61799 85558 03143 97708 42465 27830

00-14	A =		A = 3
15-44	B =		B = 3
45-69	C =	 	C = 7
70-89	D =		D = 4
90-99	E =		E = 3

2. Find the expected GPA of the situation described in #1.

$$4(.15) + 3(.3) + 2(.25) + (1)(.2) + 0(.1) = 2.2$$

(sample is 1.95)

3. A study is done that indicated that 76.2% of all college students think same-sex marriage should be legalized. What is the 95% confidence interval for this result if it was obtained from a sample of 1548 students? (Do not use the quick method!) What is the 92% confidence interval?

1 Prop 2 Int

$$\bar{X} = .762 \times 1548 = 1179.576 \Rightarrow \text{adjust to } 1180$$

$$n = 1548$$

$$C\text{-level: } .95$$

$$\rightarrow C\text{-level: } .92$$

$$(.74107, .78348)$$

95%

$$(.74333, .78122)$$

92%