

Section 4.1 - Review

1. Which of the following are discrete random variable? continuous random variables?

- a) Number of traffic fatalities per year in Florida.
- b) Distance a golf ball travels after being hit by driver.
- c) Time required to drive home from college.
- d) Number of ships in Port Harbor on any given day.
- e) Number of lightning strikes in Rocky Mtn Nat'l Park on a given day.

2. What are the 2 criteria for a distribution to be a probability distribution?

3. Consider each distribution. Determine if it is a valid probability distribution. Explain.

a)

x	0	1	2
P(x)	$\frac{1}{4}$	$\frac{3}{5}$	$\frac{3}{20}$

b)

x	0	1	2
P(x)	.25	.60	.20

4. The following table represents the number of nighttime nurse calls at a local hospital for a sample of 208 nights.

# of calls, x	36	37	38	39	40	41	42	43	44	45
# of days, f	6	10	11	20	26	32	34	28	25	16

Find the mean, variance, and standard deviation. Interpret your results. Build a table.

5. USA Today reported 25% of all state prisoners released on parole become repeat offenders while on parole. Let $X = \#$ of prisoners out of five on parole who become repeat offenders.

X	0	1	2	3	4	5
$P(X)$	.237	.396	.264	.088	.015	.001

a) Find μ and σ and interpret the results.

b) Find the probability that 1 or more of the parolees will reoffend.

c) Find the probability that 2 parolees will reoffend.

d) Find the probability that 4 or more parolees will reoffend.

6. At a carnival, you pay \$2 to play a Coin Flipping game. Each side of ~~3~~ coins is marked with a 1 or a 0. You flip all 3 coins at once and you win \$1 for every 1 that appears. What is your expected value for this game? (Hint: make a sample space list.)