

Kerjakan soal berikut ini dengan ketentuan:

1. Jawaban dalam pdf.
2. Submit sesuai dengan waktu yang telah ditentukan
3. Jika ada jawaban yang sama, maka jawaban yang sama tidak dinilai

## SOAL.

1. Which of the following could *not* be probability distributions? Explain

Example A		Example B		Example C	
$x$	$P(x)$	$x$	$P(x)$	$x$	$P(x)$
0	.80	1	.05	50	.30
1	.20	2	.15	60	.60
		3	.25	70	.40
		4	.40		
		5	.10		

2. The “Daily 3” Lottery.  
Many states have a “daily 3” lottery. The daily 3 is a uniformly distributed discrete random variable whose values range from 000 through 999. Calculate:  
a) Probability of any given three-digit number ( $P(X=x)$ )  
b)  $\mu$   
c)  $\sigma$
3. At a Noodles & Company restaurant, the probability that a customer will order a nonalcoholic beverage is .38. Use Excel to find the probability that in a sample of 5 customers (a) none of the 5 will order a nonalcoholic beverage, (b) at least 2 will, (c) fewer than 4 will, (d) all 5 will order a nonalcoholic beverage
4. Calculate each Poisson probability:  
a. Fewer than 4 arrivals with  $\lambda = 5.8$ .  
b. At least 3 arrivals with  $\lambda = 4.8$ .  
c. At most 9 arrivals with  $\lambda = 7.0$ .
5. According to J.D. Power and Associates’ 2006 Initial Quality Study, consumers reported on average 1.7 problems per vehicle with new 2006 Volkswagens. In a randomly selected new Volkswagen, find the probability of (a) at least one problem; (b) no problems; (c) more than three problems.
6. Assume that the number of calories in a McDonald’s Egg McMuffin is a normally distributed random variable with a mean of 290 calories and a standard deviation of

- 14 calories. (a) What is the probability that a particular serving contains fewer than 300 calories? (b) More than 250 calories? (c) Between 275 and 310 calories?
7. On average, 28 patients per hour arrive in the Foxboro 24-Hour Walk-in Clinic on Friday between 6 p.m. and midnight. (a) What is the approximate probability of more than 35 arrivals? (b) What is the approximate probability of fewer than 25 arrivals?
8. The caffeine content of a cup of home-brewed coffee is a normally distributed random variable with a mean of 115 mg with a standard deviation of 20 mg. (a) What is the probability that a randomly chosen cup of home-brewed coffee will have more than 130 mg of caffeine? (b) Less than 100 mg? (c) A very strong cup of tea has a caffeine content of 91 mg. What is the probability that a cup of coffee will have less caffeine than a very strong cup of tea?