Online Homework Package Created by : Elsit and Satya Mandal		
Course Id :Math 105	Topics in Mathematics	Semester : Summer2017
Instructor :Satya Mandal Line No : 84895		
Homework No: 16	Total Points :50	Due Date:(YYYY-MM-DD) 2017-07-27

Question-1	The length X of the life of some light bulbs produced in a factory is normally distributed with mean $\mu = 8000$ hours and standard deviation $\sigma = 750$ hours. What is the probability that a bulb will last between 6000 hours and 9000 hours.

Answer Question-1	This is a Numerical-Answer Type Question P(6000 < X < 9000) =
Points	5.00

Question-2	Refer to Question 1. What proportion (probability) of lamps will last less than 7500 hours?

Answer Question-2	This is a Numerical-Answer Type Question P(X < 7500) =
Points	5.00

Question-3	The annual production X of milk by a cow is normally distributed with mean $\mu = 6000$ liters and standard deviation $\sigma = 450$ liters. What proportion (probability) of cows produce less than 6500 liters annually?

Answer Question-3	This is a Numerical-Answer Type Question P(X < 6500) =
Points	5.00

Question-4	The amount of vegetable oil X produced by a machine in a day is normally distributed with $\mu = 330$ liters and standard deviation $\sigma = 45$ liters. What is the probability that a machine will produce between 300 liters and 400 liters on a day?

Answer Question-4	This is a Numerical-Answer Type Question

	P(300 < X < 400) =
Points	5.00

Question-5	The gas milage X per gallon of a model of (new and used) car is normally distributed with mean $\mu = 29$ miles and a standard deviation $\sigma = 3.1$ miles. What is the probability that the car you buy will give more than 25 miles per gallon?

Answer Question-5	This is a Numerical-Answer Type Question P(25 < X) =
Points	5.00

Question-6	The half-life X of a drug is is normally distributed with mean $\mu = 11$ hours and a standard deviation $\sigma = 2.9$ hours. A patient takes the drug at 11 PM in the night. What is the probability that 7 AM in the morning the half-life would have expired?

Answer Question-6	This is a Numerical-Answer Type Question P(X < 8) =
Points	5.00

Question-7	Refer to Question 6. What is the probability that half-life will extend beyond 8 AM when the patient starts working?

Answer Question-7	This is a Numerical-Answer Type Question P(9 < X) =
Points	5.00

Question-8	Refer to Question 6. For what proportion (probability) of patients the half-life would last between 10 hours and 15 hours?

Answer Question-8	This is a Numerical-Answer Type Question P(10 < X <15) =
Points	5.00

Question-9	The annual expenditure X of a student is approximately normally distributed with mean $\mu = 13{,}500$ dollars and standard deviation $\sigma = 1440$ dollars. What proportion of students spend less than 14,000

	dollars?

Answer Question-9	This is a Numerical-Answer Type Question P(X < 14000) =
Points	5.00

Question-10	Refer to Question 9. For what proportion (probability) of students spend more than 15000 dollars?

Answer Question-10	This is a Numerical-Answer Type Question P(15000 < X) =
Points	5.00

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