

<b>Online Homework Package</b> Created by : Elsit and Satya Mandal		
Course Id :Math 105	Topics in Mathematics	Semester : Summer2017
Instructor :Satya Mandal Line No : 84895		
Homework No: 15	Total Points :50	Due Date:(YYYY-MM-DD) 2017-07-27

**Question-1** Let Z be the standard normal random variable.  
Find the probability  $P(-1.66 < Z < 1.93)$ .

**Answer Question-1** This is a Numerical-Answer Type Question  
Probability =

Points 5.00

**Question-2** Let Z be the standard normal random variable.  
Find the probability  $P(Z < -1.135)$ .

**Answer Question-2** This is a Numerical-Answer Type Question  
Probability =

Points 5.00

**Question-3** In a requisition for bolts specifies that the diameter of bolts has to be 1 cm. The diameter X of bolts produced in a factory is normally distributed with mean  $\mu = 1$  cm and standard deviation  $\sigma = 0.02$  cm. Specification also demands that only those within .99033 cm 1.0111 cm are acceptable. What proportion (probability) of bolts produced will be acceptable?

**Answer Question-3** This is a Numerical-Answer Type Question  
 $P(.99033 < X < 1.0111) =$

Points 5.00

**Question-4** Refer to Question 3. Another specification demands that only those with diameter above .99289 cm will be acceptable. What proportion (probability) of bolts produced will be acceptable?

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

<b>Question-4</b>	$P(.99289 < X) =$
Points	5.00

<b>Question-5</b>	Time X taken to commute between campus to home has a normal distribution with mean $\mu = 30$ minutes and standard deviation $\sigma = 13$ minutes. What is the probability that you will find housing so that your commuting time will be less than 45 minutes?
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<b>Answer Question-5</b>	This is a Numerical-Answer Type Question $P(X < 45)$
Points	5.00

<b>Question-6</b>	Refer to Question 5. What is the probability that you will find housing so that your commuting time will be more than 25 minutes?
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<b>Answer Question-6</b>	This is a Numerical-Answer Type Question $P(25 < X) =$
Points	5.00

<b>Question-7</b>	Refer to Question 5. What proportion of the the community has commuting distance between 25 minutes and 50 minutes?
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<b>Answer Question-7</b>	This is a Numerical-Answer Type Question $P(25 < X < 50) =$
Points	5.00

<b>Question-8</b>	A group of retailers models that the amount of dollars X that an individual will spend in christmas shopping has a normal distribution with mean $\mu = \$1100$ and standard deviation $\sigma = \$330$ . What proportion (probability) of shoppers will spend more than \$500?
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<b>Answer Question-8</b>	This is a Numerical-Answer Type Question $P(500 < X) =$
Points	5.00

<b>Question-9</b>	Refer to Question 8. What proportion (probability) of shoppers will spend less than \$1500?
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<b>Answer Question-9</b>	<b>This is a Numerical-Answer Type Question</b> $P(X < 1500) =$
<b>Points</b>	5.00

<b>Question-10</b>	Refer to Question 8. What proportion (probability) of shoppers will spend between \$700 and \$1500?
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<b>Answer Question-10</b>	<b>This is a Numerical-Answer Type Question</b> $P(700 < X < 1500) =$
<b>Points</b>	5.00

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