STAT 614 CLASSWORK (SAMPLING DISTRIBUTIONS)

The probability distribution of random variable, *X*, is defined as follows:

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| *X* | 0 | 1 | 2 | 3 | 4 |
| Probability | 0 | .3 | .1 | .3 | .3 |

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| 1. | The table above describes a random variable that is \_\_\_\_\_\_. | |
| A) | discrete | |
| B) | continuous | |
| C) | both discrete and continuous | |
| D) | None of the above. | |
| Answer: | |  |

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| 2. | The expected value (mean) of the probability distribution is \_\_\_\_\_\_\_.  Show your work. | |
| Answer: | |  |
| Topic: | | 4.4 Means and Variances of Random Variables |

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| 3. | The *P*(*X* = 0) = | |
| Answer: | |  |
| Topic: | | 4.3 Random Variables |

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| 4. | The *P*(*X* = 3) = | |
| Answer: | |  |
| Topic: | | 4.3 Random Variables |

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| 5. | The *P*(*X* < 4) = | |
| Answer: | |  |
| Topic: | | 4.3 Random Variables |

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| 6. | The *P*(*X* > 0 ) = | |
| Answer: | |  |
| Topic: | | 4.3 Random Variables |

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| 7. | The *P*(*X* = 5) = | |
| Answer: | |  |
| Topic: | | 4.3 Random Variables |

Use R coding to find the probabilities for the standard normal Z intervals. Round answers to the nearest hundredth.

8. P(Z > .38)

9. P(Z< .63)

10.P(.24 < Z < 2.2)

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| 11. | Normal distributions represent \_\_\_\_\_\_\_ random variables. | |
| A) | discrete | |
| B) | continuous | |
| C) | None of the above. | |
| Answer: | |  |
| Topic: | | 4.3 Random Variables |

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| 12. | The amount of text messages teenagers send per month is an example of a \_\_\_\_\_\_ random variable. | |
| A) | discrete | |
| B) | continuous | |
| C) | None of the above. | |
| Answer: | |  |
| Topic: | | 4.3 Random Variables |

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| 13. | The amount of snow each county in the United States received last year is an example of a \_\_\_\_\_\_\_ random variable. | |
| A) | discrete | |
| B) | continuous | |
| C) | None of the above. | |
| Answer: | |  |
| Topic: | | 4.3 Random Variables |

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| 14. | A density curve describes the probability distribution of a discrete random variable. | |
| A) | True | |
| B) | False | |
| Answer: | |  |
| Topic: | | 4.3 Random Variables |

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| 15. | The following is the probability distribution for a discrete random variable X for which the mean ** = 2.5: Show your work.  *X* 1 2 3 4  *P*(*X* = *x*) 0.2 0.3 0.3 0.2  What is the standard deviation of the random variable X? | |
| A) | 1.05 | |
| B) | 1.58 | |
| C) | 1.025 | |
| D) | 0.96 | |
| E) | 0.98 | |
| Answer: | |  |
| Topic: | | 4.4 Means and Variances of Random Variables |