Fill in the P(X = x) values in the table below to give a legitimate probability distribution for the discrete random variable X, whose possible values are -2, -1, 4, 5, and 6.

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| Value x of X | P(X = x) |
| -2 | 0.24 |
| -1 | 0.19 |
| 4 | 0.12 |
| 5 |  |
| 6 |  |

Let X be a random variable with the following probability distribution

|  |  |
| --- | --- |
| Value x of X | P(X = x) |
| -2 | 0.10 |
| -1 | 0.35 |
| 0 | 0.40 |
| 1 | 0.05 |
| 2 | 0.10 |

Find the expectation E (X) and variance Var (X) of X.

E (x) =

Var (X) =

P (Z > -2.15) =

P (Z < 0.98) =

P ( - 0.78 < Z < 2.20) =

Let Z be a standard normal random variable, Use the calculator provided to determine the value of c such that P ( -c < Z < c)= 0.9512

Carry your intermediate computations to at least four decimal places

Let Z be a standard normal random variable, Use the calculator provided to determine the value of c such that P ( -c < Z < c)= 0.9512

Let Z be a standard normal random variable, Use the calculator provided to determine the value of c such that P ( c < Z < c-1.17)= 0.0954

The scores on a particular test are normally distributed with a mean of 130 and a standard deviation of 15 what is the minimum score needed to be in the top 20% of the scores on the test. Carry your intermediate computations to a least four decimal places , and round your answer to a least one decimal place.

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**Normal distribution: Word problems** Suppose that the time required to complete a 1040R tax form is normally distributed with a mean of http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?233minutes and a standard deviation of http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?23minutes. What proportion of 1040R tax forms will be completed in at most http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?22%3Aminutes? Round your answer to at least four decimal places.  |

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***t* distribution** Use the calculator provided to solve the following problems.* Consider a *t* distribution with http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?21degrees of freedom. Compute http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?S%23%2B%2E2%2D2%3B%23%25ow%23w%23%25ow%232%2D2%3B%2A. Round your answer to at least three decimal places.
* Consider a *t* distribution with http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?25degrees of freedom. Find the value of http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?%60such that http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?S%23%2Bw%23%25df%23%60%2A%23%3E%233%2D23. Round your answer to at least three decimal places.
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P (-1.18 < t < 1.18) =

C =

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**Chi-square distribution**

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* Suppose that follows a chi-square distribution with degrees of freedom. Compute . Round your answer to at least three decimal places.
* Suppose again that follows a chi-square distribution with degrees of freedom. Find such that . Round your answer to at least two decimal places.
* Find the median of the chi-square distribution with degrees of freedom. Round your answer to at least two decimal places.

P (x2 < 16) =

K=

Median =

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***F* distribution** * Consider an *F* distribution with http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?23numerator degrees of freedom and http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?04denominator degrees of freedom. Compute http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?S%23%2BE%23%25of%232%2D77%2A. Round your answer to at least three decimal places.
* Consider an *F* distribution with http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?0%3Bnumerator degrees of freedom and http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?20denominator degrees of freedom. Find http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?%60such that http://www.phoenix.aleks.com/alekscgi/x/math2htgif.exe/M?S%23%2BE%23%25dw%23%60%2A%23%3E%233%2D316. Round your answer to at least two decimal places.
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P ( F < 1.44) =

C =

**Central limit theorem: Sample mean**

The mean salary offered to students who are graduating from Coastal State University this year is , with a standard deviation of . A random sample of Coastal State students graduating this year has been selected. What is the probability that the mean salary offer for these students is or less?

Carry your intermediate computations to at least four decimal places. Round your answer to at least three decimal places.