**# 2*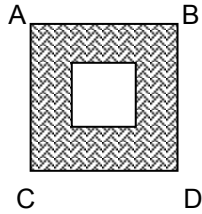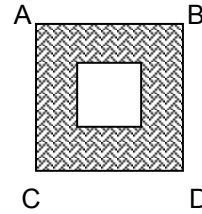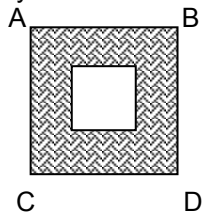* A point in square ABCD is selected at random. Find the probability that the point is in the shaded region. Inside square has dimensions x by x; outer square has dimensions 4x by 4x.
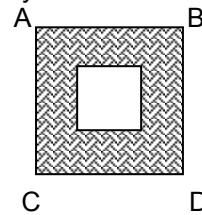
A   B

C   D

CODE:
ANSWER:

3 There are 20 trick-or-treaters and you have 17 pieces of candy. How many ways are there to choose 3 kids who will each get a baseball card from your grandfather's 45-year old collection?

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4 The probability that a battery taken from a production line is defective is 0.028. What is the probability that a battery taken from the same production line is not defective?

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ANSWER:

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CODE:

ANSWER:

CODE:

ANSWER:

5 How many distinct ways can the letters in the word MISSISSIPPI be arranged?

CODE:

ANSWER:

6 A ball is thrown off the top of a building. The table shows the height h feet of the ball above the ground level t seconds after being thrown.

t	1	2	3	4	5
h	275	311	286	143	24

Use a quadratic regression to find the relationship between t and h. Round to the nearest whole number coefficients.

CODE:
ANSWER:

7 The Department of Fisheries released 1350 tagged pickerel fingerlings into Lake Trask. Of 8000 fish caught a week later, 270 were tagged. About how many fish would expect to be in the lake?

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CODE:

ANSWER:

8 Given the data: 58, 63, 54, 77, 71, 70, 75, 72, 73, 64, 60, 80
Find the 3rd quartile.

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9 The record shown indicates types of cars an observer saw on a trip. A, A, J, A, J, J, A, E, A, J, A, A, A, J, A, J, J, J, A, E, J, J, A, J, A, J, E, J, A, A, A, A, E, A (A = American, J = Japanese, E = European). Based on these results, out of 1000 cars, how many would you expect to be American?

CODE:

ANSWER:

10 If 12 heads has resulted from tossing a coin and the probability of getting heads on the next toss is 0.6, then how many tosses have been made so far?
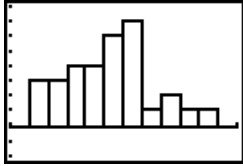
CODE:

ANSWER:

CODE:

ANSWER:

CODE:

ANSWER:

CODE:

ANSWER:

11 The stem and leaf diagram shown here gives the weights of apples in 24 three lb bags. The leaves in each row are ordered from small to large. Find the mean of these ordered values.

Stems	Leaves
3.0	2
3.1	0 2 2 4 7 9
3.2	0 1 1 2 6 6 6
3.3	0 1 6 9 9
3.4	1 2 9
3.5	3
3.6	2

CODE:

ANSWER:

12 Calculate the mean value from the histogram.

```
WINDOW
 Xmin=40
 Xmax=100
 Xscl=5
 Ymin=-2
 Ymax=8
 Yscl=1
 Xres=1
```

CODE:

ANSWER:

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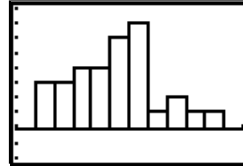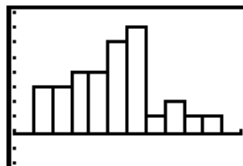
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CODE:

ANSWER:

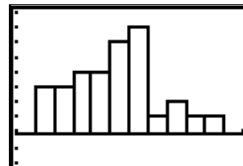# 13 You are on vacation and have packed 2 sweaters (red & blue), 3 shirts (striped, white & gray), and 2 pair of pants (denim & khaki), what is the probability, if you randomly choose a combination, that you choose the red sweater and denim pants?
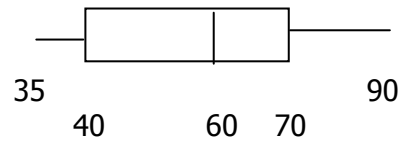
CODE:
ANSWER:

CODE:
ANSWER:

CODE:
ANSWER:

CODE:
ANSWER:

14 Given the boxplot, what is the smallest interval containing 25% of the data?

35   90
  40   60 70

CODE:
ANSWER:

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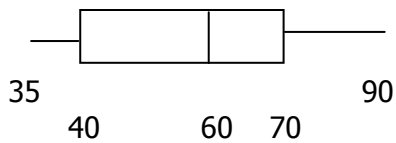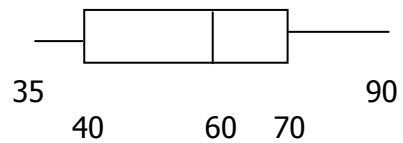 40   60 70

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ANSWER:

15 Calculate the mean deviation regarding the accuracy of a person for the 10 trials shown below. Each value is a percent.

76	43	60	75	83	54	48	52	72	79

CODE:

ANSWER:

16 A penny is tossed 12 times. How many outcomes in the sample space consist of 11 heads and 1 tail?

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CODE:

ANSWER:

CODE:

ANSWER:

16 A candidate conducts a telephone poll by calling every registered voter whose last name begins with a letter selected at random. The sampling method is known as
a) random
b) convenience
c) cluster
d) systematic

CODE:
ANSWER:

17 A statistic package gives values of r^2, where r is the correlation coefficient between two variables. If $r^2 = 0.54$, what are all possible values of r?

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ANSWER:

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ANSWER:

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ANSWER:

18 A fast-food chain promoted a "stay-slim" ad by listing 10 choices from the menu giving the number of calories per hundreds (i.e. 33 is 330 calories). Find the z - score for x = 61.
33, 37, 42, 51, 54, 56, 57, 61, 67, 72

CODE:
ANSWER:

CODE:
ANSWER:

CODE:
ANSWER:

CODE:
ANSWER:

19 A set of data has a y-value of 3 when x = 1. The model of best fit is given as $y = 0.986x^2 + 2.125x + 0.093$. What is the percent error for x = 1 between the actual and predicted y values?

CODE:

ANSWER:

CODE:

ANSWER:

CODE:

ANSWER:

CODE:

ANSWER:

20 Populations for a sample of 6 Asian countries, given in thousands, are 16 786; 676 218; 151 720; 118 449;   50 740; 2472 . If the sample mean is 169 397.5, calculate the sample standard deviation.

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21 If X has a Poisson distribution with mean $\lambda = 8.5$, what is the variance σ^2 of X?

CODE:
ANSWER:

CODE:
ANSWER:

CODE:
ANSWER:

CODE:
ANSWER:

22 If A and B are independent events, P(A) = 0.7 and P(B) = 0.2, what is the value of P(B|A) ?

CODE:

ANSWER:

CODE:

ANSWER:

CODE:

ANSWER:

CODE:

ANSWER:

23   A student received a score of 76% on a test. There were 75 questions. How many questions did the student answer correctly?

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CODE:
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CODE:
ANSWER:

24 A standardized test had a mean score of 100 and a standard deviation of 8. What percent of the scores were between 92 and 108?

CODE:

ANSWER:

25 A suntan lotion causes an allergic reaction in one out of every 5 people. If 20 people apply the lotion, calculate the probability that exactly 5 will experience an allergic reaction?

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