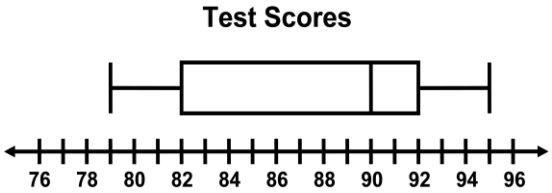
Question No. 1 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

Question

1. What type of data display is shown?



(A) box-and-whiskers plot
(B) frequency table
(C) histogram
(D) line plot
(E) stem-and-leaf plot

Feedback

A. Correct!
The given display is a box-and-whiskers plot.

B. Incorrect!
Review the definition and examples of frequency tables.

C. Incorrect!
Review the definition and examples of histograms.

D. Incorrect!
Review the definition and examples of line plots.

E. Incorrect!
Review the definition and examples of stem-and-leaf plots.

Solution

A box-and-whiskers plot is a graphical representation of numerical data using the extreme values and quartile values.

The correct answer is (A).

Question No. 2 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

Question

2. The line plot shows the results of a survey that asked "What is your favorite sport to watch?" Which sport ranks as second favorite?

(A) baseball
(B) basketball
(C) football
(D) golf
(E) soccer

Feedback

A. Incorrect!
Baseball is one of the least favorite sports to watch by the survey participants.

B. Correct!
Basketball is the second favorite sport to watch by the survey participants.

C. Incorrect!
Football is the favorite sports to watch by the survey participants.

D. Incorrect!
Golf is one of the least favorite sports to watch by the survey participants.

E. Incorrect!
Soccer is the third favorite sport to watch by the survey participants.

Solution

Count the frequency of each sport to find the second largest frequency.

Baseball – 2
Basketball – 4
Football – 5
Golf – 2
Soccer – 3

Basketball has the second largest frequency.

The correct answer is (B).

Question No. 3 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

Question

3. The stem-and-leaf plot shows the points scored by a football team in 14 games. What was the largest number of points scored by the team in one game?

Points Scored

Stem	Leaf
1	0 0 4 6
2	0 0 2 4 8
3	0 2 4 8
4	1 8
5	2

(A) 5
(B) 8
(C) 10
(D) 52
(E) 58

Feedback

A. Incorrect!
Review how to read a stem-and-leaf plot.

B. Incorrect!
Review how to read a stem-and-leaf plot.

C. Incorrect!
This is the smallest number of points scored by the team in one game.

D. Correct!
You correctly read the largest number on the stem-and-leaf plot.

E. Incorrect!
Review how to read a stem-and-leaf plot.

Solution

In a stem-and-leaf plot, the number in the left column is the first digit in the number and the number in the right column is the second number. The largest number in the plot is 52.

The correct answer is (D).

Question No. 4 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

Question

4. The frequency table shows the number of pizzas sold by topping at a pizzeria. How many pizzas were sold with the Spinach or Anchovies topping?

Pizzas Sold

Activity	Votes
Anchovies	|||
Cheese	𝍸 𝍸 ||||
Pepperoni	𝍸 ||
Sausage	𝍸 𝍸 ||
Spinach	𝍸 |||

(A) 3
(B) 8
(C) 11
(D) 14
(E) 44

Feedback

A. Incorrect!
Review how to read a frequency table.

B. Incorrect!
Review how to read a frequency table.

C. Correct!
You added the frequencies for anchovies and spinach to find the final answer.

D. Incorrect!
Review how to read a frequency table.

E. Incorrect!
Review how to read a frequency table.

Solution

Find the number of pizzas sold with anchovies and with spinach. Then add the values.

Anchovies = 3 Spinach = 8

3 + 8 = 11

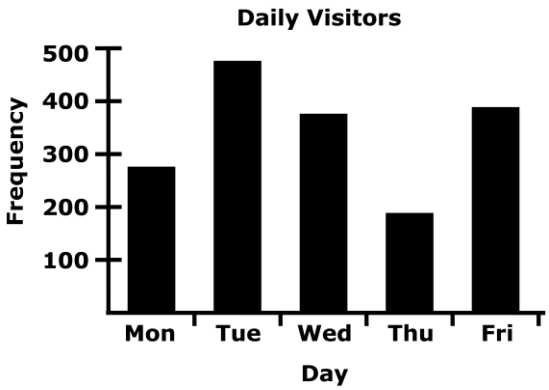
The correct answer is (C).

Question No. 5 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

Question

5. The bar graph shows the number of people who visited a museum each day in one week. Which day did the museum have the least visitors?



(A) Monday
(B) Tuesday
(C) Wednesday
(D) Thursday
(E) Friday

Feedback

A. Incorrect!
Find the day that has the shortest frequency bar.

B. Incorrect!
Find the day that has the shortest frequency bar.

C. Incorrect!
Find the day that has the shortest frequency bar.

D. Correct!
Thursday has the shortest frequency bar.

E. Incorrect!
Find the day that has the shortest frequency bar.

Solution

Find the day that has the shortest frequency bar to find the day the museum had the least number of visitors. Thursday has the shortest frequency bar.

The correct answer is (D).

Question No. 6 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.	
 **Question**	**6.** A dance team has to choose a new performance uniform. They can choose from 5 different tops, 3 bottoms, and 4 shoe types. How many different uniforms could the dance team put together? (A) 3 (B) 4 (C) 5 (D) 12 (E) 60
 **Feedback**	A. Incorrect! Use the Fundamental Counting Principle to solve the problem.
	B. Incorrect! Use the Fundamental Counting Principle to solve the problem.
	C. Incorrect! Use the Fundamental Counting Principle to solve the problem.
	D. Incorrect! Use the Fundamental Counting Principle to solve the problem.
	E. Correct! You used the Fundamental Counting Principle to solve the problem.
 **Solution**	Use the Fundamental Counting Principle to solve the problem. tops × bottoms × shoes = 5 × 3 × 4 = 60 outfits **The correct answer is (E).**

Question No. 7 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

Question

7. A teacher randomly chooses a class president, vice-president, and secretary by pulling names from a hat. There are 21 students in the class. How many different permutations of class officers are possible?

(A) 3
(B) 24
(C) 63
(D) 1,330
(E) 7,980

Feedback

A. Incorrect!
Use the permutation formula to find the answer.

B. Incorrect!
Use the permutation formula to find the answer.

C. Incorrect!
Use the permutation formula to find the answer.

D. Incorrect!
Use the permutation formula to find the answer.

E. Correct!
You used the permutation formula to find the answer.

Solution

Use the permutation formula to find the answer.

$$P(21,3) = \frac{21!}{(21-3)!}$$
$$= \frac{21!}{18!}$$
$$= 21 \times 20 \times 19$$
$$= 7,980$$

The correct answer is (E).

Question No. 8 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

Question

8. A small company needs to send a 4-person group to a conference. The company has 12 employees. How many different groups can the company send to the conference?

(A) 4
(B) 12
(C) 495
(D) 11,880
(E) None of the above

Feedback

A. Incorrect!
Use the combination formula to find the answer.

B. Incorrect!
Use the combination formula to find the answer.

C. Correct!
You used the combination formula to find the answer.

D. Incorrect!
Use the combination formula to find the answer.

E. Incorrect!
Use the combination formula to find the answer.

Solution

Use the combination formula to find the answer.

$$C(12,4) = \frac{12!}{4!(12-4)!}$$
$$= \frac{12!}{4!8!}$$
$$= \frac{12\times11\times10\times9}{4\times3\times2\times1}$$
$$= \frac{11{,}880}{24}$$
$$= 495$$

The correct answer is (C).

Question No. 9 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.	
 **Question**	**9.** A pen box contains 5 black pens, 2 red pens, and 7 blue pens. What is the probability of randomly choosing a red pen from the box? (A) $\frac{1}{7}$ (B) $\frac{1}{2}$ (C) $\frac{5}{14}$ (D) $\frac{1}{6}$ (E) $\frac{5}{9}$
 **Feedback**	A. Correct! You found the ratio of the number of red pens to the total number of pens to solve the problem.
	B. Incorrect! Review the definition of probability.
	C. Incorrect! Review the definition of probability.
	D. Incorrect! Review the definition of probability.
	E. Incorrect! Review the definition of probability.
 **Solution**	Find the ratio of the number of red pens to the total number of pens to solve the problem. $P(\text{red}) = \frac{\#\text{ of red pens}}{\#\text{ of total pens}}$ $= \frac{2}{14}$ $= \frac{1}{7}$ **The correct answer is (A).**

Question No. 10 of 10

Instructions: (1) Read the problem and answer choices carefully (2) Work the problems on paper as needed (3) Pick the answer (4) Go back to review the core concept tutorial as needed.

Question

10. What is the probability of choosing a blue marble from a bag that contains 32 green marbles?

(A) 0%
(B) 1%
(C) 32%
(D) 50%
(E) 100%

Feedback

A. Correct!
It is impossible to pull a blue marble from a bag of only green marbles.

B. Incorrect!
Review the definition of probability.

C. Incorrect!
Review the definition of probability.

D. Incorrect!
Review the definition of probability.

E. Incorrect!
Review the definition of probability.

Solution

Find the ratio of the number of blue marbles to the total number of marbles to solve the problem.

$$P(\text{blue}) = \frac{\#\text{ of blue marbles}}{\#\text{ of total marbles}}$$
$$= \frac{0}{32}$$
$$= 0\%$$

The correct answer is (A).