

1. A football team scored the following numbers of points in its last eight games:

15, 24, 17, 19, 21, 38, 25, 39

If the coach constructs a box plot for these data, what will be the lower quartile?

- A 31
B 23
C 18
D 17

2. Andy took the following data from the post office and made a box-and-whisker plot.

Rates for Postage

Weight (in pounds)	Local Rate
1.5	\$1.11
2	\$1.12
2.5	\$1.14
3	\$1.15
3.5	\$1.17
4	\$1.18
4.5	\$1.20
5	\$1.22
6	\$1.25
7	\$1.28
8	\$1.31
9	\$1.34
10	\$1.37

Which set of numbers contains the lower quartile, median, and upper quartile that Andy will use to make his correct box-and-whisker plot?

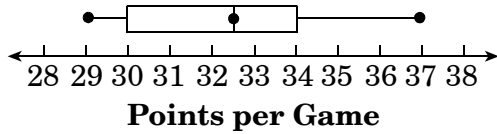
- A { \$1.145, \$1.20, \$1.32 }
B { \$1.15, \$1.215, \$1.305 }
C { \$1.11, \$1.21, \$1.37 }
D { \$1.145, \$1.20, \$1.295 }

3. Scoring leaders in the NBA for 1986–1995 had these averages:

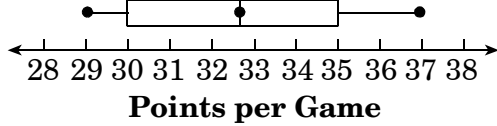
30, 37, 35, 33, 34, 32, 30, 33, 30, 29

Which box plot accurately illustrates these averages?

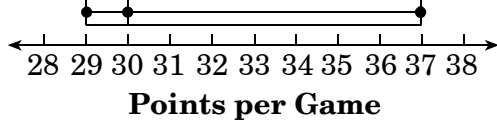
- A **NBA Top Scoring Averages (1986-1995)**



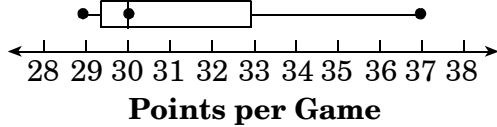
- B **NBA Top Scoring Averages (1986-1995)**



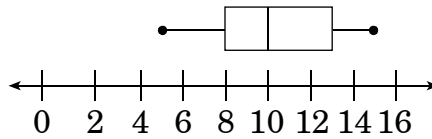
- C **NBA Top Scoring Averages (1986-1995)**



- D **NBA Top Scoring Averages (1986-1995)**



4. During the summer, Mrs. Duncan teaches at a computer camp for grades K–12. The ages of the students during one session are summarized in this box-and-whisker plot.

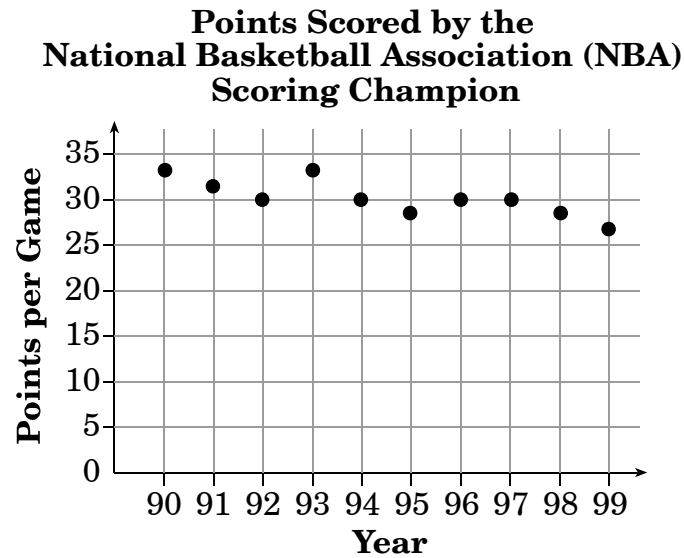


**Ages of Students
at Computer Camp**

Which set of data could have been used to construct the box-and-whisker plot?

- A 5, 8, 10, 10, 10, 13, 15
- B 5, 8, 10, 10, 12, 14, 15
- C 5, 6, 10, 10, 11, 15, 15
- D 5, 7, 9, 10, 13, 14, 15

5. The scatter plot displays the average number of points per game scored each year by the National Basketball Association's (NBA) scoring champion.



In which year did the scoring champion average the *fewest* points per game?

- A 1990
- B 1993
- C 1996
- D 1999

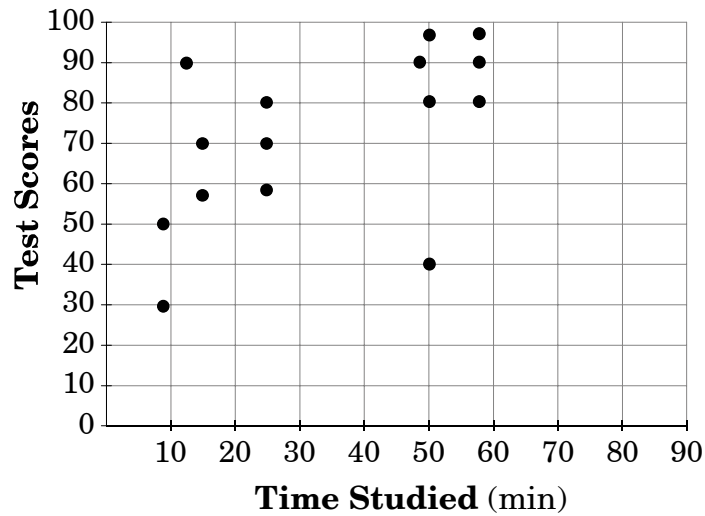
6. The table below shows the relationship between elevation and record high temperatures.

Place	Elevation (ft)	Highest Temp (°F)
City A	367	136
City B	-178	134
City C	-722	129
City D	622	128
City E	676	120
City F	26	122
City G	72	108
City H	49	59

How would the relationship be described?

- A the higher the elevation, the higher the record temperature
- B the lower the elevation, the higher the record temperature
- C the lower the elevation, the lower the record temperature
- D There is no relationship between elevation and record temperature.

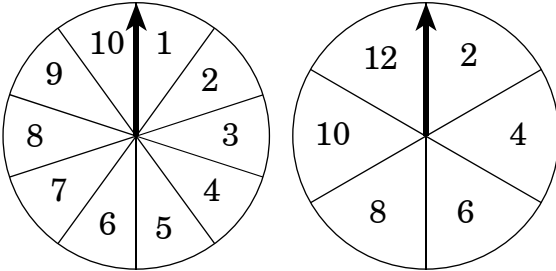
7. Which relationship is suggested by the scatter plot below?



- A Study time does not affect test scores.
- B The longer the student studied, the higher the test score.
- C The longer the student studied, the lower the test score.
- D Students who did not study received a high test score.

8. Patrice and Tom needed to report the results of a survey regarding the favorite snack food of the students at Milton Middle School. How could the experiment be done to produce a random sampling of 100 students?
- A Ask the students as they get off the school buses.
 - B Ask the opinion of all the teachers at the school.
 - C Ask all the students who are in the school cafeteria during one day.
 - D Ask every 20th student randomly until 100 students have been asked.
9. Three dimes are tossed at the same time. What is the probability that only one of the dimes will land on heads and the other two will land on tails?
- A $\frac{1}{8}$
 - B $\frac{1}{3}$
 - C $\frac{3}{8}$
 - D $\frac{1}{2}$
10. A bag is filled with spools of thread. Five are red, 6 are yellow, and 4 are white. After a spool is picked from the bag, it is not replaced. On the first and second tries, no white thread is picked. What is the probability of picking white thread on the third try?
- A $\frac{4}{13}$
 - B $\frac{4}{15}$
 - C $\frac{1}{13}$
 - D $\frac{1}{15}$

11. A fair spinner is divided into ten equal sections numbered 1 through 10. Another fair spinner is divided into six equal sections numbered 2, 4, 6, 8, 10, and 12.



What is the probability that both spinners will land on 6?

- A $\frac{16}{60}$
 B $\frac{2}{60}$
 C $\frac{1}{60}$
 D $\frac{1}{100}$

12. Matt has a bag containing 12 one-dollar bills and 8 five-dollar bills. Without looking, he pulls out one bill and places it on the table. He then picks a second bill from the bag. What is the probability he will have 2 five-dollar bills?

- A $\frac{8}{20} \cdot \frac{7}{19}$
 B $\frac{8}{20} \cdot \frac{7}{20}$
 C $\frac{1}{8} \cdot \frac{1}{7}$
 D $\frac{1}{8} \cdot \frac{1}{8}$

13. A fair number cube is labeled 1 to 6. If the cube is tossed 300 times, **about** how often would a prime number be expected to show up on the top face?
- A 50 times
 B 100 times
 C 150 times
 D 200 times

14. Juan rolled a pair of fair number cubes labeled 1 to 6. If he rolled the pair 210 times, for ***about*** how many of the rolls should he expect the sum to be a seven?
- A 21
- B 35
- C 45
- D 70

End of Goal 4 Sample Items

Answers to EOG Mathematics Grade 8 Sample Items

Goal 4

1. **Objective 4.01**
Interpret and construct box plots.
Thinking Skill: Integrating **Correct Answer:** C
2. **Objective 4.01**
Interpret and construct box plots.
Thinking Skill: Analyzing **Correct Answer:** D
3. **Objective 4.01**
Interpret and construct box plots.
Thinking Skill: Analyzing **Correct Answer:** A
4. **Objective 4.01**
Interpret and construct box plots.
Thinking Skill: Analyzing **Correct Answer:** A
5. **Objective 4.02**
Collect data involving two variables and display on a scatter plot;
interpret results; identify positive and negative relationships.
Thinking Skill: Analyzing **Correct Answer:** D
6. **Objective 4.02**
Collect data involving two variables and display on a scatter plot;
interpret results; identify positive and negative relationships.
Thinking Skill: Analyzing **Correct Answer:** D
7. **Objective 4.02**
Collect data involving two variables and display on a scatter plot;
interpret results; identify positive and negative relationships.
Thinking Skill: Analyzing **Correct Answer:** B
8. **Objective 4.04**
Evaluate arguments based on data. Discuss random vs. biased sampling.
Thinking Skill: Analyzing **Correct Answer:** D
9. **Objective 4.05**
Find the probability of independent and dependent events.
Thinking Skill: Applying **Correct Answer:** C
10. **Objective 4.05**
Find the probability of independent and dependent events.
Thinking Skill: Applying **Correct Answer:** A

Answers to EOG Mathematics Grade 8 Sample Items

Goal 4

11. Objective 4.05

Find the probability of independent and dependent events.

Thinking Skill: Applying **Correct Answer:** C

12. Objective 4.05

Find the probability of independent and dependent events.

Thinking Skill: Integrating **Correct Answer:** A

13. Objective 4.06

Make predictions based on theoretical probabilities and experimental results.

Thinking Skill: Integrating **Correct Answer:** C

14. Objective 4.06

Make predictions based on theoretical probabilities and experimental results.

Thinking Skill: Integrating **Correct Answer:** B