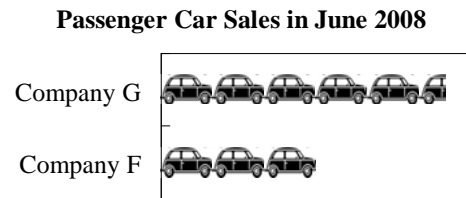



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- Which expression represents the n^{th} term of the sequence 3, 9, 27, 81, 243, ...?
 - 3^n
 - $3n$
 - n^3
 - $3n^3$
- On a map, the distance between two cities is measured to be $2\frac{1}{2}$ inches. The map scale is 1 inch : 300 miles. What is the distance between the two cities?
 - 120 miles
 - 450 miles
 - 750 miles
 - 900 miles
- What is the solution set for the equation $|2x - 3| + 5 = 14$?
 - {6}
 - {11}
 - {-6, 3}
 - {-3, 6}
- A right triangle has a hypotenuse of length $\sqrt{20}$ units. Which of these could be the lengths of the triangle's two legs?
 - 2 units and 4 units
 - 4 units and 5 units
 - 4 units and 16 units
 - 10 units and 10 units
- A student's scores on 4 exams are 78, 79, 80, and 84. After a fifth exam, the student's mean score is 80. What was the student's score on the fifth exam?
 - 76
 - 79
 - 80
 - 81

- The chart below shows the number of passenger cars sold by two companies in June 2008.



 = 20,000 passenger cars

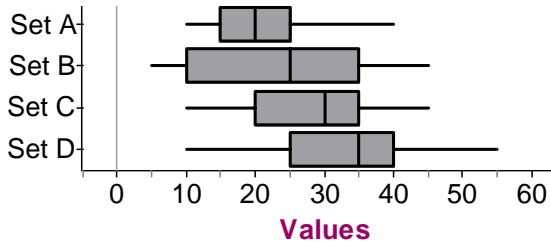
Approximately how many more passenger cars did Company G sell in June 2008 than Company F?

- 110,000
 - 60,000
 - 50,000
 - 25,000
- A pair of shoes has a retail price of \$89.50. The shoes are on sale for 30% off the retail price. What is the sale price of the shoes?
 - \$26.85
 - \$59.50
 - \$62.65
 - \$89.20
 - Which equation is equivalent to $E = mc^2$, where m , c , and E are only positive values?
 - $c = \frac{E}{m^2}$
 - $c = \sqrt{\frac{E}{m}}$
 - $c = \left(\frac{E}{m}\right)^2$
 - $c = \frac{E}{2m}$

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9. The graph below uses box-and-whisker plots to show four sets of data.



Which set of data has the largest interquartile range?

- A. Set A
 B. Set B
 C. Set C
 D. Set D
10. The matrix below represents the number of T-shirts sold at a high school during one week.
- | | | | |
|--------|-----|-------|------|
| | Red | White | Blue |
| Small | 12 | 8 | 16 |
| Medium | 20 | 18 | 5 |
| Large | 6 | 4 | 10 |
- How many large blue T-shirts did they sell during the week?
- A. 10
 B. 16
 C. 20
 D. 31
11. An internet security system uses numerical values that are products of two prime numbers. Which value could be used by this system?
- A. 18
 B. 21
 C. 24
 D. 27
12. A fair die is rolled one time. What are the odds in favor of rolling an even number?
- A. 1 to 1
 B. 1 to 2
 C. 1 to 3
 D. 1 to 6

13. A pizza restaurant offers a variety of crusts and toppings.

Crusts	Meat Toppings	Vegetable Toppings
Thin	Sausage	Mushrooms
Thick	Pepperoni	Olives
Stuffed	Ham	Peppers
	Bacon	Onions
	Ground Beef	Tomatoes

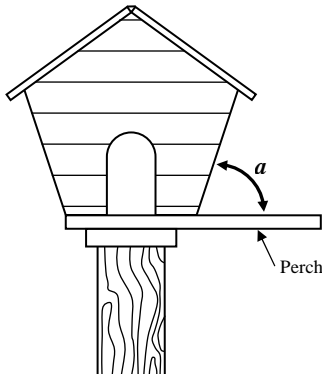
Based on the table, how many different kinds of pizza can be made using one crust, one meat topping, and one vegetable topping?

- A. 13
 B. 15
 C. 30
 D. 75
14. When an 8-foot long ladder is placed against a building at the optimum angle, the base of the ladder is 2 feet from the building. A 20-foot long ladder is placed against the building at the same angle. How far from the building is the base of the ladder?
- A. 5 feet
 B. 6 feet
 C. 10 feet
 D. 14 feet
15. The cost (C) of a newspaper advertisement is \$15.00 plus \$2.00 per line. What equation describes the cost of an advertisement with n lines?
- A. $C = 17n$
 B. $C = 30n$
 C. $C = 2n + 15$
 D. $C = 15n + 2$
16. Sarah traveled 12 miles ($d = 12$) at a speed (s) miles per hour. On the return trip, she increased her speed by 6 miles per hour and traveled the 12 miles in one hour less. This situation can be modeled by the equation $s^2 + 6s = 6d$. What was Sarah's speed (s) on the first part of her trip?
- A. 6 miles per hour
 B. 9 miles per hour
 C. 12 miles per hour
 D. 18 miles per hour

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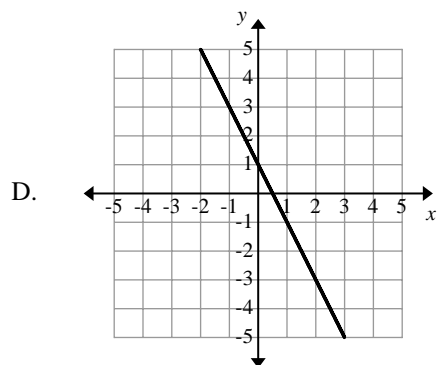
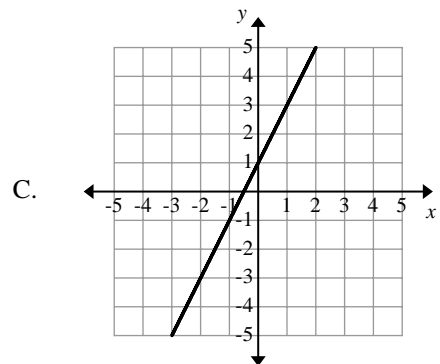
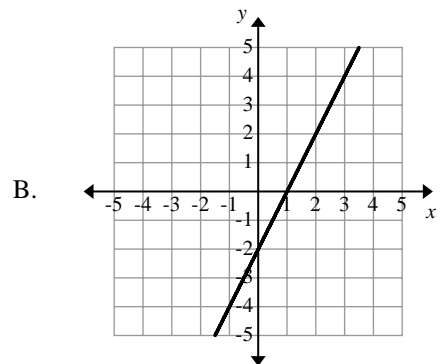
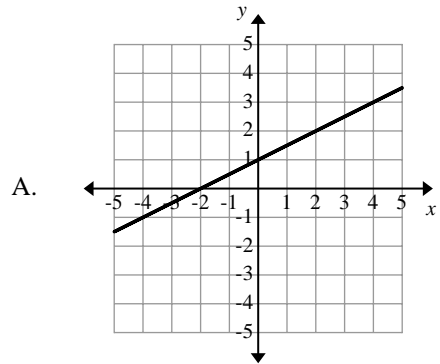
17. The diagram below shows a birdhouse in the shape of a regular pentagon, with a perch that extends from the floor.



What is the measure of the exterior angle (a) between the perch and the wall of the birdhouse?

- A. 60°
 B. 72°
 C. 92°
 D. 108°
18. A small business has ten employees: nine craftsmen who each earn \$25,000 per year and one manager who earns \$75,000 per year. The company wishes to place an advertisement to hire more craftsmen and wants to include salary information in the ad. Why would it be inappropriate for the business to list the mean salary of all ten employees—the nine craftsmen and the one manager—in the advertisement?
- A. The mean salary will change when new workers are hired.
 B. The mean salary is not equal to the median salary.
 C. The mode is always a better measure of center when listing salaries than the mean salary.
 D. The advertisement is seeking craftsmen and should not include the manager's salary.
19. What must be added to $2x^2 - 5x - 12$ to get a sum of $7x^2 - x - 18$?
- A. $5x^2 - 4x - 6$
 B. $5x^2 - 4x + 6$
 C. $5x^2 + 4x - 6$
 D. $5x^2 + 4x + 6$

20. Which graph represents the linear equation $y = 2x + 1$?



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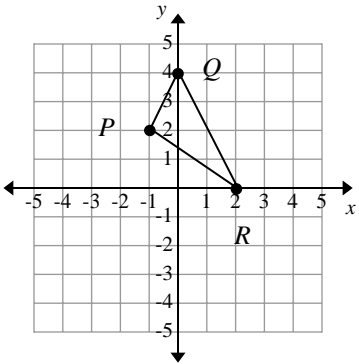
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21. The table below shows the diameter of the Earth as listed on four websites.

Website	Diameter of Earth
Website A	1.27×10^4 km
Website B	1.28×10^4 km
Website C	12746 km
Website D	12760 km

Which website gives the largest diameter for Earth?

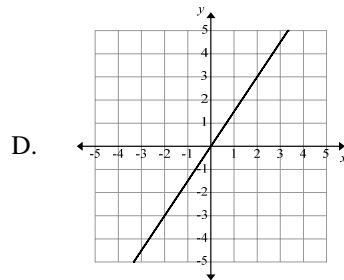
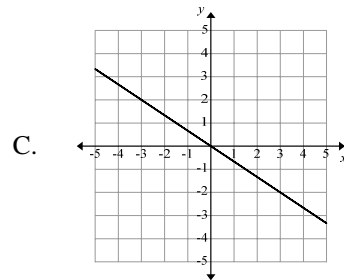
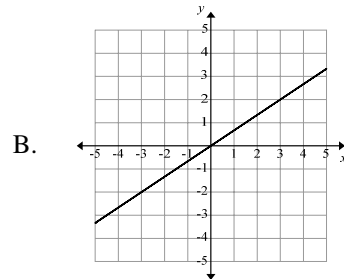
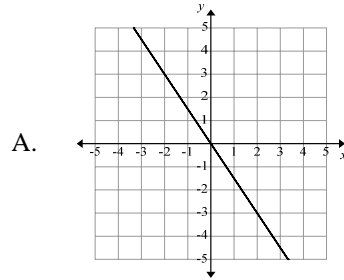
- A. Website A
 B. Website B
 C. Website C
 D. Website D
22. Triangle PQR is shown on the coordinate plane below.



What is the equation of the line, through R , parallel to \overline{PQ} ?

- A. $y = 2x - 4$
 B. $y = 2x + 2$
 C. $y = 4x - 4$
 D. $y = 4x + 2$
23. Use the data set below:
 19, 23, 23, 23, 36, 38, 38, 40, 57
- Which measure best describes the value 38?
- A. mean
 B. median
 C. mode
 D. range

24. Which line has a slope of $\frac{2}{3}$?

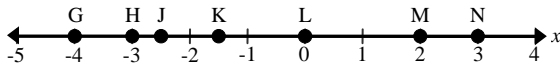


25. What is the n^{th} term of the sequence 6, 8, 10, 12, 14, ... ?
- A. $4 + 2n$
 B. $2(4 + n)$
 C. $2 + 4n$
 D. $6 + n$

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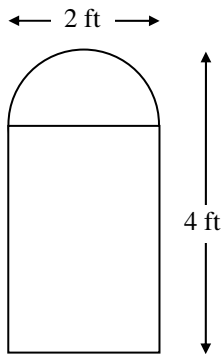
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26. The value of x represents the coordinate of a point on the number line below. Some of the points are labeled.



Which is the set of all labeled points on the number line that satisfies $-3 \leq x < 2$?

- A. {J, K, L}
 - B. {J, K, L, M}
 - C. {H, J, K, L}
 - D. {H, J, K, L, M}
27. The diagram below shows a window in the shape of a rectangle with an adjoining semicircle. The overall height of the window is 4 feet; the overall width is 2 feet.



What is the area of the window? [Use $\pi \approx 3.14$.]

- A. 7.14 ft^2
 - B. 7.57 ft^2
 - C. 9.14 ft^2
 - D. 9.57 ft^2
28. A team scored the following points in each of its first five games:

63, 80, 63, 90, 84

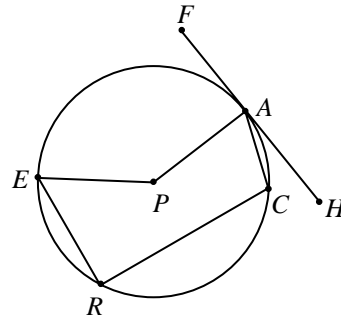
What is the difference between the team's mean and median scores?

- A. 27
- B. 17
- C. 13
- D. 4

29. The application rate of a liquid lawn fertilizer is 2 ounces of fertilizer per 100 square feet of lawn area. The fertilizer is only sold in whole quarts [1 quart = 32 ounces]. What is the smallest number of quarts of fertilizer that can be purchased to cover a lawn with an area of 4960 square feet?

- A. 1 quart
- B. 3 quarts
- C. 4 quarts
- D. 6 quarts

30. Use circle P below:



Which angle represents a central angle?

- A. $\angle FAP$
 - B. $\angle ERC$
 - C. $\angle PAC$
 - D. $\angle EPA$
31. On Friday of each week, Brian earns \$10 for mowing lawns. Each Wednesday, he spends \$2 to purchase gas for the mower. The table below shows how much money Brian had each Wednesday and Friday for the past several weeks.

Week	Day	Money
Week 1	Wednesday	\$8
	Friday	\$18
Week 2	Wednesday	\$16
	Friday	\$26
Week 3	Wednesday	\$24
	Friday	\$34

The pattern of the amount of money Brian has on Wednesdays and Fridays continues. How much money will Brian have on Wednesday of Week 5?

- A. \$32
- B. \$42
- C. \$40
- D. \$50

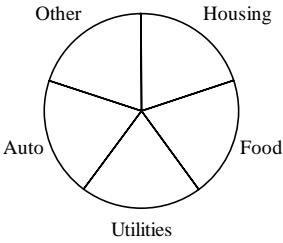
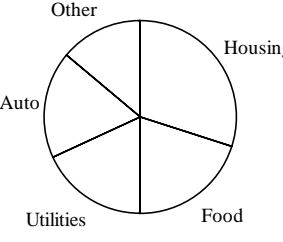
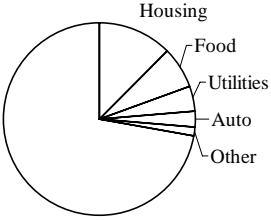
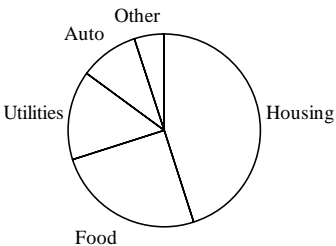
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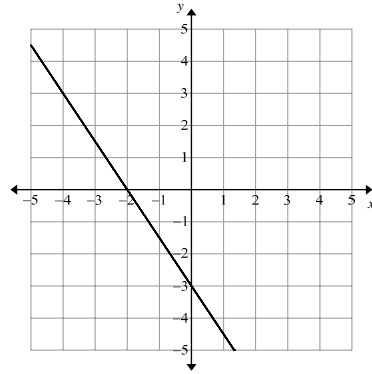
32. The table below shows a family's household budget.

Expense	Percentage
Housing	45%
Food	25%
Utilities	15%
Auto	10%
Other	5%

Which graph best represents the table?

- A. 
- B. 
- C. 
- D. 

33. Use the graph below:



Which is an equation of the line?

- A. $3x + 2y = -6$
- B. $3x - 2y = -6$
- C. $2x + 3y = -6$
- D. $2x - 3y = -6$
34. A school district has 32 buses. Each bus can carry a maximum of 57 students. All of the buses are being used for a trip. What is the largest total number of students that could ride the buses on this trip?
- A. Between 80 and 100
- B. Between 150 and 200
- C. Between 1400 and 1600
- D. Between 1800 and 2000
35. Four students measured a steel rod that has an actual length of 0.86 meters. Their measurements, reported to the nearest millimeter, are listed in the table below:

Student	Measurement
Adam	862 mm
Bailey	870 mm
Colin	859 mm
Diane	850 mm

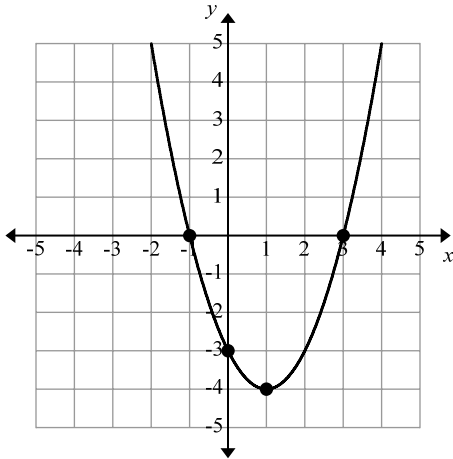
Which student's measurement was the most accurate?

- A. Adam
- B. Bailey
- C. Colin
- D. Diane

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36. The graph represents the quadratic equation $y = x^2 - 2x - 3$.



What are the solutions to $x^2 - 2x - 3 = 0$?

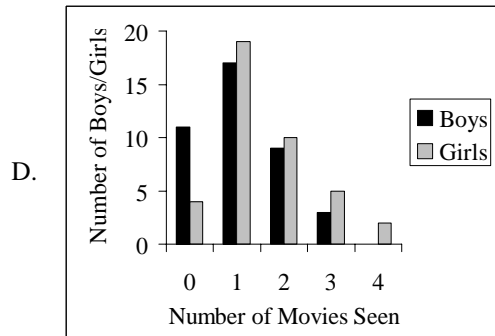
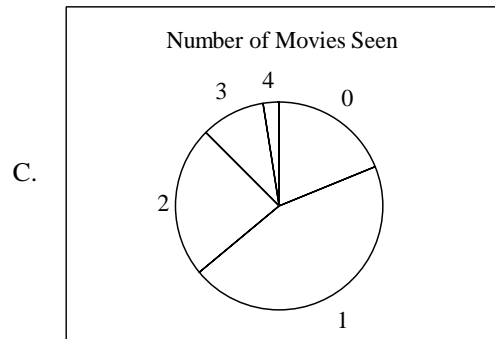
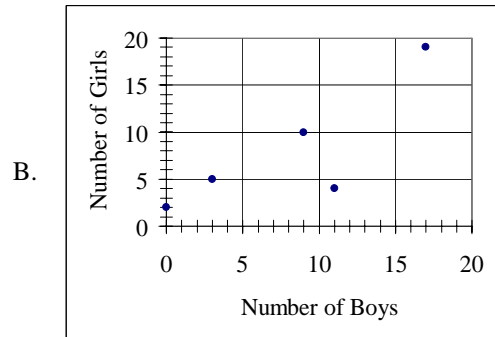
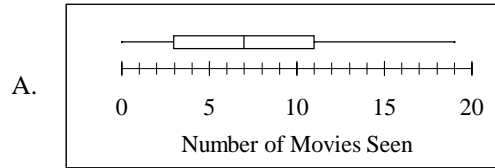
- A. $x = -3$ and $x = 0$
 - B. $x = 1$ and $x = -4$
 - C. $x = -1$ and $x = 3$
 - D. $x = -3$ and $x = 1$
37. Which right triangle has angle measures of 30° , 60° , and 90° ?

- A.
- B.
- C.
- D.

38. The table below shows the number of movies that each of 40 boys and 40 girls watched last summer.

Number of Movies	Number of Boys	Number of Girls
0	11	4
1	17	19
2	9	10
3	3	5
4	0	2

Which graph is most appropriate to compare the number of movies watched by boys and the number of movies watched by girls last summer?



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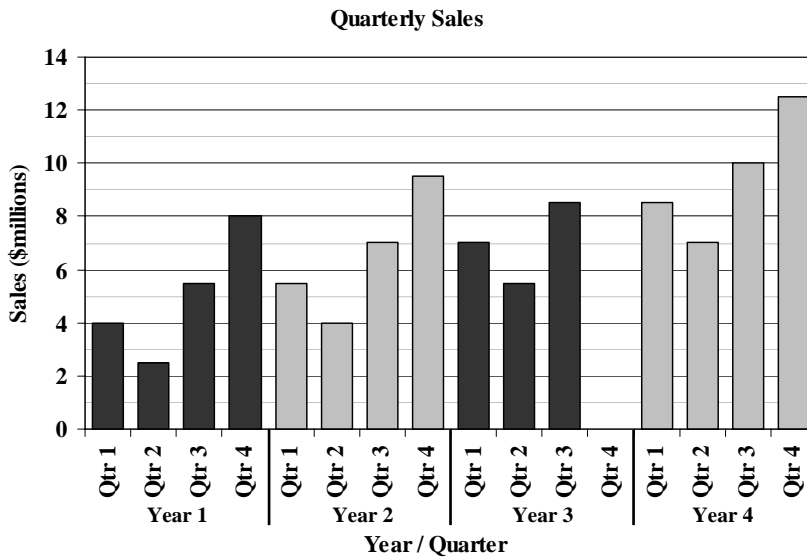
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39. What is the missing term in the sequence

$$-4, 2, -1, \frac{1}{2}, \text{---}, \frac{1}{8}, -\frac{1}{16}, \dots ?$$

- A. $-\frac{1}{4}$
- B. $-\frac{1}{6}$
- C. $\frac{1}{6}$
- D. $\frac{1}{4}$

40. The chart below shows quarterly sales for a certain company.



The sales value for Year 3, Quarter 4 is missing. Based on the pattern of sales, what would be a reasonable estimate of the sales for Year 3, Quarter 4?

- A. about \$11 million
- B. about \$8.5 million
- C. about \$7 million
- D. about \$5 million

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Standards and Key by Question

Question	Key	1999 Standard	2006 Standard	Content / Application
1	A	2.8.1	2.12.1	C2 / A3
2	C	3.12.5	3.12.5	C3 / A2
3	D	2.8.6	2.8.2	C2 / A2
4	A	4.12.7	4.12.7	C3 / A2
5	B	5.12.4	5.12.2	C4 / A3
6	C	5.8.1	5.8.1	C4 / A3
7	C	1.8.2	1.8.7	C1 / A3
8	B	2.12.3	2.12.2	C2 / A2
9	B	5.8.1	5.8.1	C4 / A3
10	A	2.12.5	5.12.1	C2 / A1
11	B	1.12.3	1.12.8	C1 / A3
12	A	5.8.2	5.7.5	C4 / A2
13	D	5.8.3	5.8.4	C4 / A2
14	A	4.8.2	4.8.2	C3 / A3
15	C	2.12.5	2.8.4	C2 / A1
16	A	2.12.4	2.12.3	C2 / A3
17	B	4.12.1	4.12.1	C3 / A2
18	D	5.12.5	5.12.5	C4 / A3
19	C	2.12.4	2.12.3	C2 / A2
20	C	2.12.5	2.8.4	C2 / A1
21	B	1.12.3	1.12.8	C1 / A3
22	A	4.12.5	4.8.5	C3 / A3
23	D	5.12.4	5.8.2	C4 / A1
24	B	4.12.5	4.8.5	C3 / A1
25	A	2.8.1	2.12.1	C2 / A3
26	C	2.8.6	2.8.2	C2 / A2
27	B	3.12.5	3.12.5	C3 / A3
28	D	5.12.4	5.8.2	C4 / A2
29	C	3.7.1	5.7.1	C3 / A3
30	D	4.12.1	4.12.1	C3 / A1
31	C	2.8.1	2.8.1	C2 / A2
32	D	2.12.5	2.8.4	C2 / A3
33	A	4.12.5	4.8.5	C3 / A2
34	D	1.8.7	1.8.6	C1 / A2
35	C	3.12.3	3.12.2	C3 / A3
36	C	2.12.4	2.12.3	C2 / A2
37	B	4.12.7	4.12.7	C3 / A1
38	D	5.8.1	5.8.1	C4 / A2
39	A	2.8.1	2.8.1	C2 / A1
40	A	5.8.6	5.8.6	C4 / A3

*NHSPE for Classes of 2011 and earlier is based upon the 1999 Nevada State Standards. Correlation to 2006 Standards is provided for IDMS analysis.

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Standards and Key by Content/Application

Question	Key	1999 Standard*	2006 Standard*	Content / Application
34	D	1.8.7	1.8.6	C1 / A2
7	C	1.8.2	1.8.7	C1 / A3
11	B	1.12.3	1.12.8	C1 / A3
21	B	1.12.3	1.12.8	C1 / A3
10	A	2.12.5	5.12.1	C2 / A1
15	C	2.12.5	2.8.4	C2 / A1
20	C	2.12.5	2.8.4	C2 / A1
39	A	2.8.1	2.8.1	C2 / A1
3	D	2.8.6	2.8.2	C2 / A2
8	B	2.12.3	2.12.2	C2 / A2
19	C	2.12.4	2.12.3	C2 / A2
26	C	2.8.6	2.8.2	C2 / A2
31	C	2.8.1	2.8.1	C2 / A2
36	C	2.12.4	2.12.3	C2 / A2
1	A	2.8.1	2.12.1	C2 / A3
16	A	2.12.4	2.12.3	C2 / A3
25	A	2.8.1	2.12.1	C2 / A3
32	D	2.12.5	2.8.4	C2 / A3
24	B	4.12.5	4.8.5	C3 / A1
30	D	4.12.1	4.12.1	C3 / A1
37	B	4.12.7	4.12.7	C3 / A1
2	C	3.12.5	3.12.5	C3 / A2
4	A	4.12.7	4.12.7	C3 / A2
17	B	4.12.1	4.12.1	C3 / A2
33	A	4.12.5	4.8.5	C3 / A2
14	A	4.8.2	4.8.2	C3 / A3
22	A	4.12.5	4.8.5	C3 / A3
27	B	3.12.5	3.12.5	C3 / A3
29	C	3.7.1	5.7.1	C3 / A3
35	C	3.12.3	3.12.2	C3 / A3
23	D	5.12.4	5.8.2	C4 / A1
12	A	5.8.2	5.7.5	C4 / A2
13	D	5.8.3	5.8.4	C4 / A2
28	D	5.12.4	5.8.2	C4 / A2
38	D	5.8.1	5.8.1	C4 / A2
5	B	5.12.4	5.12.2	C4 / A3
6	C	5.8.1	5.8.1	C4 / A3
9	B	5.8.1	5.8.1	C4 / A3
18	D	5.12.5	5.12.5	C4 / A3
40	A	5.8.6	5.8.6	C4 / A3

*NHSPE for Classes of 2011 and earlier is based upon the 1999 Nevada State Standards. Correlation to 2006 Standards is provided for IDMS analysis.