

Below is the pre-and post-test that includes an attitude survey used in 2008 with a summary of responses on the right. "Pre" indicates a pre-test response, and "Post" indicates a post-test response. The responses are tabulated at the right of each item, and "X" indicates an invalid or blank response. QRCW indicates students in the QRCW course and FAPP indicates students in a course that uses the book *For All Practical Purposes* as a textbook. The student populations in the two courses are similar. The pre-tests were given during the first week of the semester-long classes and the post-tests were given during the last week of classes. Students were awarded bonus points for inclusion in the course grade based on the scores on these testings (number correct out of 20).

1. On the daily weather map below the same isobar passes through St. Louis and Minneapolis. Which of the following can be concluded from this?



- A. St. Louis and Minneapolis have the same temperature.
- B. St. Louis and Minneapolis have the same relative humidity.
- C. St. Louis and Minneapolis have the same atmospheric pressure.
- D. St. Louis and Minneapolis have the same latitude.
- E. St. Louis and Minneapolis have the same elevation above sea level.

	QRCW		FAPP	
	Pre	Post	Pre	Post
A	11	9	8	13
B	22	16	11	13
C	51	57	52	49
D	0	5	4	3
E	11	5	8	5
X	0	3	0	0
total	95	95	83	83
% correct	54%	60%	63%	59%

2. The Fall 2007 enrollment at the University of Arkansas was 18,200, which was an increase of 4% over the Fall 2006 enrollment. The Fall 2006 enrollment was:

- A. 17,472
- B. 17,500
- C. 17,800
- D. 18,900
- E. 18,958

	QRCW		FAPP	
	Pre	Post	Pre	Post
A	53	48	53	51
B	24	42	20	26
C	13	2	9	3
D	3	1	1	1
E	2	2	0	1
X	0	0	0	1
total	95	95	83	83
% correct	25%	44%	24%	31%

3. A McDonald's customer ordered a burger for 79¢, fries for \$1.19 and a coke for \$1.29. If the locality has a 5% sales tax, approximately what is the total bill?

- A. \$3.00
- B. \$3.27
- C. \$3.45
- D. \$3.68
- E. \$4.00

	QRCW		FAPP	
	Pre	Post	Pre	Post
A	1	0	1	0
B	1	1	1	2
C	84	89	76	75
D	3	5	4	4
E	6	0	1	2
X	0	0	0	0
total	95	95	83	83
% correct	88%	94%	92%	90%

4. A credit card has a \$25 annual fee and charges 18% interest per year on the unpaid balance. If you average \$500 unpaid balance each month for a year, your total payment for use of the card for the year is:

- A. \$32.50
- B. \$43.00
- C. \$90.00
- D. \$115.00
- E. \$140.00

	QRCW		FAPP	
	Pre	Post	Pre	Post
A	0	4	0	4
B	2	2	1	2
C	17	9	9	8
D	68	74	66	67
E	5	5	5	2
X	3	1	2	0
total	95	95	83	83
% correct	72%	78%	80%	81%

5. Consider the following collection of graphs that appeared recently in The Seattle Times:



Over the time frame represented in these graphs, which one of the following statements is true?

- A. Profits for Starbucks have dropped from \$38.97 to \$24.10.
- B. Profits for Starbucks have increased \$41.2 million.
- C. Sales at Starbucks have dropped from \$38.97 billion to \$24.10 billion.
- D. The price for a share of Starbucks stock has increased from \$0.15 to \$0.21.
- E. The price for a share of Starbucks stock has decreased by \$24.10.

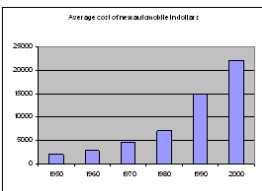
	QRCW		FAPP	
	Pre	Post	Pre	Post
A	10	7	9	9
B	33	64	39	56
C	10	4	4	8
D	26	16	24	8
E	15	3	6	2
X	1	1	1	0
total	95	95	83	83
% correct	35%	67%	47%	67%

Note: Item 5 was flawed for the pre-test. No answer was correct because choice B had "billion" instead of "million."

6. A rectangular building measures 20 ft wide by 32 ft long. If it has a flat roof, which must be covered by plywood sheets measuring 4 ft by 8 ft, what is the least number of plywood sheets needed to cover the roof?

A. 8
B. 12
C. 16
D. 20
E. 32

7. The graph below shows the average cost of a new automobile in the US for the given years. The average cost in 1960 is approximately what percent of the average cost in 1990?



A. 14% B. 20% C. 43% D. 233% E. 500%

8. An automobile is traveling at 22 feet per second and accelerates at a rate of 2 feet per second per second for 5 seconds. At the end of the 5 seconds the car's speed is:

A. 24 feet per second
B. 27 feet per second
C. 30 feet per second
D. 32 feet per second
E. 34 feet per second

9. The following gives the cost of a quart of milk for the years listed. A cost-of-milk index is established with a base of 100 in 1965. The value of the cost-of-milk index in 2005 is:


Year	Cost of a quart of milk	Index Value
1965	\$0.75	100
1975	\$1.20	
1995	\$1.50	200
2005	\$1.80	

A. 230 B. 240 C. 250 D. 260 E. 270

10. John has the following test scores in his mathematics class: 69, 87, 81, 80, and 78. Which of the following is correct?

A. The median of John's test scores is 79.
B. The median of John's test scores is 81.
C. The mean of John's test scores is 79.
D. The mean of John's test scores is 80.
E. The mean of John's test scores is 81.

11. The following graph shows the projected path of Hurricane Dean as it approaches Mexico. According to these predictions, approximately how fast is Dean traveling?



A. 6 mph B. 11 mph C. 14 mph

12. John pays \$50 for a calculator and Tina pays \$70 for a calculator. Which of the following correctly compares Tina's cost to John's cost?

A. Tina's cost is 20% more than John's cost.

#6	QRCW		FAPP	
	Pre	Post	Pre	Post
A	5	3	6	3
B	9	5	5	4
C	5	6	4	3
D	70	80	62	69
E	5	0	5	3
X	1	1	1	1
total	95	95	83	83
% correct	74%	84%	75%	83%

#7	QRCW		FAPP	
	Pre	Post	Pre	Post
A	21	23	21	15
B	45	47	38	53
C	4	1	4	2
D	8	5	11	3
E	15	17	8	8
X	2	2	1	2
total	95	95	83	83
% correct	47%	49%	46%	64%

#8	QRCW		FAPP	
	Pre	Post	Pre	Post
A	6	3	5	5
B	4	2	3	1
C	6	10	8	9
D	79	79	64	67
E	0	1	2	0
X	0	0	1	1
total	95	95	83	83
% correct	83%	83%	77%	81%

#9	QRCW		FAPP	
	Pre	Post	Pre	Post
A	18	10	18	10
B	41	62	26	46
C	29	7	30	22
D	5	12	7	3
E	1	0	0	1
X	1	4	2	1
total	95	95	83	83
% correct	43%	65%	31%	55%

#10	QRCW		FAPP	
	Pre	Post	Pre	Post
A	10	4	6	2
B	5	2	4	0
C	75	86	69	79
D	2	3	3	1
E	3	0	0	0
X	0	0	1	1
total	95	95	83	83
% correct	79%	91%	83%	95%

#11	QRCW		FAPP	
	Pre	Post	Pre	Post
A	5	8	2	2
B	8	8	11	15
C	34	31	26	22
D	26	30	21	24
E	20	16	21	19
X	2	2	2	1
total	95	95	83	83
% correct	27%	32%	25%	29%

#12	QRCW		FAPP	
	Pre	Post	Pre	Post
A	7	6	11	6
B	20	17	14	11

- B. John's cost is 40% less than Tina's cost.
- C. Tina's cost is 1.2 times John's cost.
- D. John's cost is 20% less than Tina's cost.
- E. Tina's cost is 1.4 times John's cost.

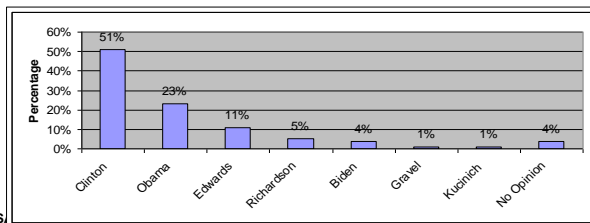
13. The participation rate of students in intramural athletics at Arkansas College was 44% in 1980 and 55% in 2000. Based on this information, which of the following is correct?

- A. The relative change in the participation rate is 11%.
- B. The increase in the participation rate is 11 percentage points.
- C. The increase in the participation rate is 20 percentage points.
- D. The relative change in the participation rate is 20%.
- E. The increase in the participation rate is 25 percentage points.

14. The following graph shows the results of a recent CNN poll:

CNN/Opinion Research Corporation Poll
Nevada's favored Democrat

Question: If Nevada's presidential caucus were held today, which of the following people would you be most likely to support?



likely to vote in the Democratic presidential caucus.

SAMPLING ERROR: +/- 5% pts

Note: Connecticut Sen. Christopher Dodd registered less than 1 percent of the vote.

This poll indicates a sampling error of +/-5%. Which of the following statements best represents what this sampling error means?

- A. Between 48.5% and 53.5% of Nevada's Democratic voters would vote for Clinton over any of the other listed Democrats.
- B. Between 46% and 56% of Nevada's Democratic voters would vote for Clinton over any of the other listed Democrats.
- C. 5% of the people polled may change their mind before the election.
- D. 5% of the population couldn't be reached for a response.
- E. About 5% of the poll results could be recorded incorrectly.

15. The length of a rectangle is between 2 feet and 2.5 feet and the width is between 6 inches and 9 inches. The area of the rectangle is:

- A. More than 1 square foot and less than 1.25 square feet
- B. Less than 2 square feet
- C. More than 1.25 square feet
- D. Less than 260 square inches
- E. More than 216 square inches

16. The population of Wyoming is 510,000 and the population of Arkansas is 2.4 million. Arkansas has 4 members of the US House of Representatives and 2 US Senators, while Wyoming has 1 member of the US House of Representatives and 2 US Senators. Based on this information, which of the following is not correct? (Note that the US Congress consists of the US Senate and the US House of Representatives.)

- A. Wyoming has one member of the US Congress for each 170,000 population.
- B. Arkansas has one member of the US Congress for each 400,000 population.
- C. Wyoming has one US Senator for each 255,000 population.
- D. Arkansas has one member of the US House of Representatives for each 600,000 population.
- E. Arkansas has one US Senator for each 1.4 million population.

17. The odds against the Red team winning a tournament are 3 to 1. This means that the Red team will win 1 time out of 4, or 25% of the time. If the odds against the Blue team winning the tournament are 7 to 2, which of the following is correct?

- A. The Blue team will win 2 times out of 7.
- B. The Blue team will win 2/7 of the time.
- C. The Blue team will win 2 times out of 9.
- D. The Blue team will win 7 times out of 9.
- E. The Blue team is more likely to win than the Red team.

	5	3	5	7
C	3	2	3	3
E	59	66	49	56
X	1	1	1	0
total	95	95	83	83
% correct	62%	69%	59%	67%

#13	QRCW		FAPP	
	Pre	Post	Pre	Post
A	33	15	23	22
B	53	63	53	56
C	4	3	1	2
D	1	7	1	1
E	3	6	4	1
X	1	1	1	1
total	95	95	83	83
% correct	56%	66%	64%	67%

#14	QRCW		FAPP	
	Pre	Post	Pre	Post
A	11	8	5	7
B	42	46	47	42
C	9	12	11	9
D	6	4	3	9
E	26	23	14	14
X	1	2	3	2
total	95	95	83	83
% correct	44%	48%	57%	51%

#15	QRCW		FAPP	
	Pre	Post	Pre	Post
A	12	11	15	10
B	19	28	12	26
C	27	19	21	25
D	25	27	23	13
E	9	9	10	9
X	3	1	2	0
total	95	95	83	83
% correct	20%	29%	14%	31%

#16	QRCW		FAPP	
	Pre	Post	Pre	Post
A	4	5	14	7
B	7	4	7	11
C	12	15	8	15
D	24	18	14	17
E	47	53	37	33
X	1	0	3	0
total	95	95	83	83
% correct	49%	56%	45%	40%

#17	QRCW		FAPP	
	Pre	Post	Pre	Post
A	16	4	11	7
B	2	1	2	4
C	47	47	46	52
D	15	8	11	15
E	14	4	10	5
X	1	0	3	0
total	95	64	83	83
% correct	49%	73%	55%	63%

