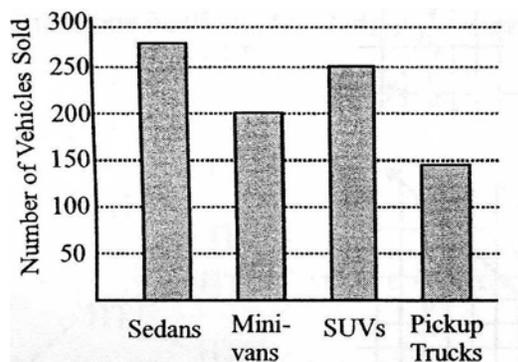**Part 1: Data & Statistics Review (Strand IVA)**

1.) George has scores of 76, 78, 79, and 67 on four history tests. What is the lowest score George can have on the fifth test to have an average score of 80?

　(A) 85
　(B) 90
　(C) 95
　(D) 100

2.) Paul constructed a bar graph showing the number of each of four types of vehicle sold by Sunshine Motors last year.

Approximately how many more sedans and minivans were sold than SUV's and pickup trucks?

　(A) 25
　(B) 50
　(C) 75
　(D) 100

3.) Lisa' exam scores for history are listed below. What is her average score for the tests?　　　　*TEST 1: 95*　　　　　　*TEST 2: 105*　　　　　*TEST 3: 80*

　(A) 91
　(B) 92
　(C) 100
　(D) 93

4.) Which set of numbers has the greatest range?

　(A) {95, 86, 78, 62}
　(B) {90, 65, 83, 59}
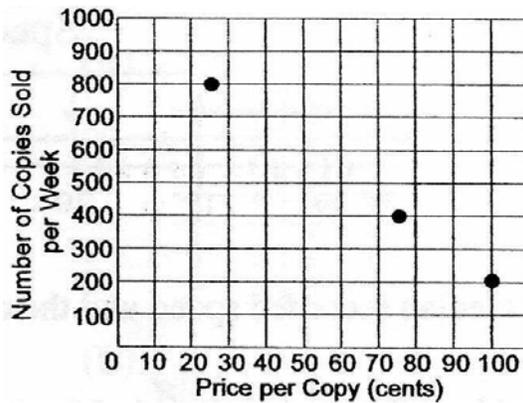　(C) {32, 39, 44, 56}
　(D) {29, 35, 49, 51}

5.) If you wanted to show the percentages of your allowance you spent in different categories, which graph would you choose to best represent the data?

    (A) bar graph
    (B) pictograph
    (C) line graph
    (D) circle graph

6.) Eddie averaged 34 points per game in the 12 regular season games. He averaged 42 points per game in the 3 tournament games. What is Eddie's overall average?
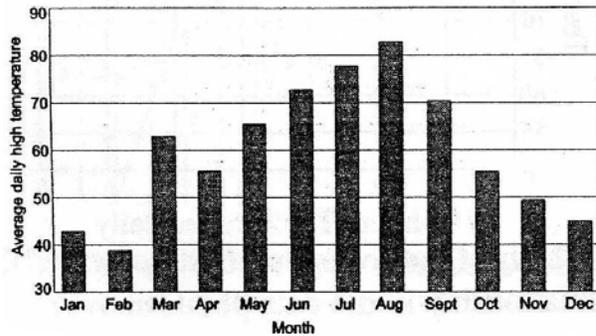
    (A) 44.5
    (B) 38
    (C) 37.2
    (D) 35.6

7.) Mario and George have been publishing a weekly newspaper. They have sold copies at various prices, $.25, $.75, and $1.00 as shown in the graph.

They have made a business deal with a printing company for 600 copies per week. At what price per copy are they likely to sell 600 copies?
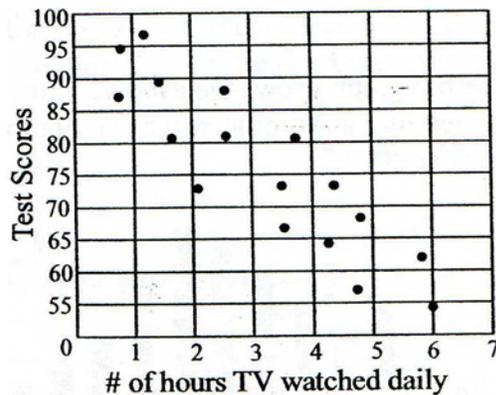
    (A) $.30
    (B) $.40
    (C) $.50
    (D) $.60

8.) The bar graph show the average daily high temperature at Point Henry each
month for the year 2003.

Which of these statements is false?

(A) During 6 of the months, the average daily high exceeded 60 degrees.
(B) The average daily high for the entire year exceeded 80 degrees
(C) The average daily high for August was higher than for July
(D) The average daily high for March exceeded 60 degrees

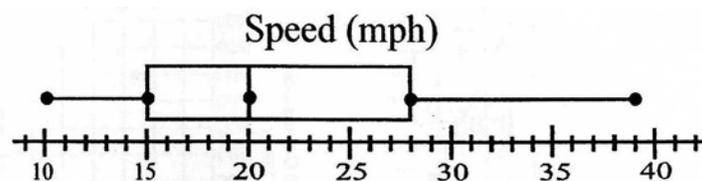9.) Which of the following best describes the relationship in the data points below?

(A) Positive relationship
(B) Negative relationship
(C) No relationship
(D) Cannot be determined

10.) The school cafeteria workers are conducting a survey of students' likes and
dislikes for the foods they serve at lunch time. Once they tally the data and begin
to order the food they need, which measure of central tendency will help most to
make food purchases?

(A) Mean
(B) Mode
(C) Range
(D) Median

11.) District Court judges are elected from a two county area. Here are the results from this year's election.

Candidate	PERCENTAGE OF TOTAL VOTE IN	
	County A	County B
Lou Smith	58%	10%
John McDermitt	30%	25%
Patrick Mann	12%	65%
Total Votes	10,500	4,800

Which candidate had the overall majority vote?

(A) Lou Smith
(B) John McDermitt
(C) Patrick Mann
(D) Not enough information

12.) The weights of six packages are 5 pounds, 4 pounds, 7 pounds, 18 pounds, 5 pounds, and 9 pounds. What are the mean, median, and mode of these weights?

(A) 6.0 , 5.5 , 7.0
(B) 6.0 , 6.5 , 7.0
(C) 8.0 , 5.0 , 5.0
(D) 8.0 , 6.0 , 5.0

13.) (**Open Answer**) As part of a traffic safety campaign, a speed detector was used to record speed in the entrance driveway to the Jefferson High School student parking lot. The box-and-whisker plot below shows the results.

Speed (mph)

(A) Find the median recorded speed and the range of speeds.

(B) The speed limit in the driveway is 15 miles per hour. What percentage of drivers exceeded the speed limit?

(C) The high school administration is considering installing a radar and camera system and issuing warning tickets to drivers driving 20 miles per hour of faster. If speeds continue at the rates represented in the box-and-whisker plot above, and 36 drivers enter the parking lot, what would be the approximate expected number of warning tickets issued?

14.)   Rachel kept track of how many scoops she sold of the five most popular
        flavors in her ice cream shop.

Flavor	Scoops
Vanilla Bean	30
Chunky Chocolate	36
Strawberry Coconut	44
Chocolate Peanut Butter	46
Mint Chocolate Chip	??

How many scoops of mint chocolate chip would need to be sold to make the mean
number of scoops sold 38?

(A) 33
(B) 34
(C) 38
(D) 39

Part 2: Probability Review: (Strand IVB)

15.)   Adrianna has 4 hats, 8 shirts, and 9 pairs of pants. How many different
        clothes combinations can she make?

(A) 21
(B) 96
(C) 288
(D) 82, 944

16.)   How many different ways can Mrs. Smith choose 2 students to go to the
        library if she has 20 students in her class?

(A) 40
(B) 190
(C) 380
(D) 3,800

17.)   Mrs. Blake has 8 pairs of dress shoes. How many different ways can she
        arrange five pairs of her shoes in the closet?

(A) 40,320 ways
(B) 120 ways
(C) 8,000 ways
(D) 6,720 ways
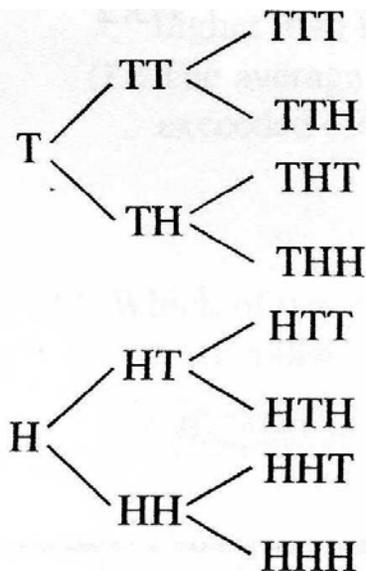
18.)   Tim tosses three nickels on the ground. What is the probability that all three will show "heads"?

   (A) 1/8
   (B) 3/8
   (C) 1/2
   (D) 8/27

19.)   A box contains spools of thread: 3 spools of re, 4 spools of blue, 2 spools of green, and 3 spools of yellow. What is the probability of reaching in the box without looking and picking a red spool?

   (A) 1/4
   (B) 1/5
   (C) 2/7
   (D) 3/4

20.)   Use the tree diagram below to predict the probability of flipping one coin 3 times and getting one heads and two tails.
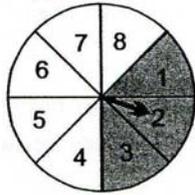

   (A) 1/2
   (B) 1/4
   (C) 3/8
   (D) 8

21.)   In a family of 4 children, what is the probability that all four will be girls?

   (A) 1/4
   (B) 1/8
   (C) 1/16
   (D) 1/32

22.)   If Charles spins the spinner pictured below, which of the following is most likely to happen?

(A) It will land on an even number
(B) It will land on an odd shaded number
(C) It will land on an un-shaded number
(D) It will land on an odd number

23.)   In a standard deck of 52 playing cards, there are 13 hearts. If 3 cards are drawn from the deck (without replacement), what is the probability that all 3 cards will be hearts?

(A) (13/52)(13/52)(13/52)
(B) (13/52)(12/51)(11/50)
(C) (13/52)(13/51)(13/50)
(D) (13/52)(12/52)(11/52)

24.)   Sarah deposits $.50 into Miss Clucky, a machine which makes chicken squawks and gives Sarah one plastic egg with a toy surprise. In the machine, 30 eggs contain a rubber frog, 43 eggs contain a plastic ring, 23 eggs contain a necklace, and 18 eggs contain a plastic car. What is the probability that Miss Clucky will give Sara a necklace in her egg?

(A) 1/114
(B) 23/114
(C) 23/91
(D) 1/5

25.)   There are 6 red cards and 7 black cards in Laurie's hand. If two cards are selected at random (without replacement), what is the probability that the first card selected is red and the second is black?

(A) 42/169
(B) 7/26
(C) 49/156
(D) 42/144

26.) **(Open Answer)** There are 52 cards in a standard deck of cards: 13 clubs, 13 diamonds, 13 hearts, and 13 spades. Dawn draws two cards at random from the deck, and both are hearts. If she draws again, without replacing the first two cards, what is the probability that the third card she draws will also be a heart?

Chance & Data Standard (2009/2010)
MCA REVIEW
Answer Key

NOTE
When completing the review, make sure to always check your answers to determine if they are right or wrong. If you get any of the problems wrong, it is vital that you get help to figure out where you made the mistake so that you can learn to better understand the problem. The goal of this review is to fully and completely understand all 26 questions so that on the MCA II test, you are perfect on the questions pertaining to the statistics and Probability standards. Always strive to be the best that you can be!!!

1.) D
2.) C
3.) D
4.) A
5.) D
6.) D
7.) C
8.) B
9.) B
10.)   B
11.)   A
12.)   D
13.)   A) The median is 20. The range is 29
       B) 75% of the drivers exceeded the 15 mph speed limit
       C) The approximate expected number of warning tickets issued
          is 18
14.)   B
15.)   C
16.)   C
17.)   D
18.)   A
19.)   A
20.)   C
21.)   C
22.)   C
23.)   B
24.)   B
25.)   B
26.)   11/50