Unit 4 Skill Assessment

MM1D1a

1) The football team is giving away free stuff. You could get a shirt, football, or a stuffed animal. They have 3 CHEE shirts, 8 CHEE footballs, and 10 stuffed wildcats. How many prizes are there to choose from?

2) Your class is having an election. There are 4 candidates for president, 6 for vice-president, and 3 for secretary. How many could a president, vice president, and secretary be chosen?

MM1D1b

3) There are 9 choices of toppings for a pizza. How many different pizzas with 3 toppings could I make?

4) There are 15 runners in a marathon. How many ways could gold, silver, and bronze be awarded to the first 3 finishers?
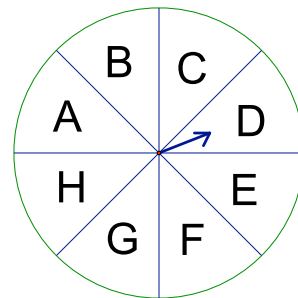
5) Evaluate and show your work:

   a. $_9C_3$

   b. $_9P_3$

MM1D2a

6) The spinner below is divided into eight congruent sections. What is the probability of spinning the spinner once and landing on a vowel?

7) A bag contains 10 green marbles, 6 white marbles, and 8 red marbles. If Billy draws a marble without looking, what is the probability that Billy will select either a green marble or a red marble?

8) What is the probability of drawing a red card or a diamond from a standard deck of 52 cards?

MM1D2b

9) There are 20 marbles in a bag: 7 green, 8 yellow, and 5 red. What is the probability of drawing a green marble and then a red marble on two draws if you **DO NOT replace** the first marble drawn?

10) Using a standard deck of 52 cards, what is the probability of drawing a Jack and then a King if your 1ˢᵗ card drawn **is replaced**?
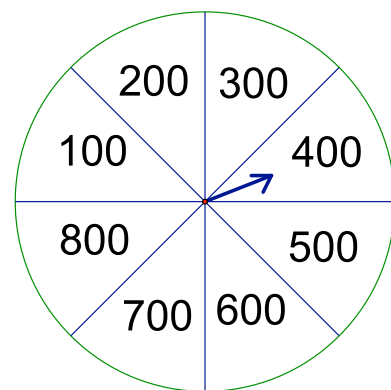
11) Using a standard deck of 52 cards, what is the probability of drawing an Ace and then a spade if your 1ˢᵗ card drawn **is not replaced?**

MM1D2c

12) Gus rolled a six-sided number cube. **Given** that he rolled an odd number, what is the probability that he rolled a 1?

13) Gus decided to roll his number cube twice. **Given** that he rolled a 5 on his first roll, what is the probability that the sum of his two rolls will be 10?

14) Angie spun the spinner below twice. **Given** that her first spin was 100, what is the probability that the sum of her two sums will be at most 500?

MM1D2d

15) What is the expected value of spinning the spinner to the right once?

16) For the spinner above, suppose you received an amount of tokens equal to the value of the space you landed on. In other words, if you land on 700, then you get 700 tokens. If you have to pay 400 tokens to spin the spinner, is it a fair game? (Hint: Use your answer from the previous question)

17) Ryan puts two $20 bills, two $10 bills, and one $5 bill in a bag. He then picks one bill from the bag at random. What is the expected value of each pick is his experiment?

MM1D3a

18) Qua scored the following numbers of points in his last 10 basketball games: 2, 21, 10, 8, 15, 22, 10, and 12. What were the **mean** and **median** number of points Qua scored for those games?

19) What are the 1st Quartile, 3rd Quartile, and Interquartile Range (IQR) of the following list of scores?
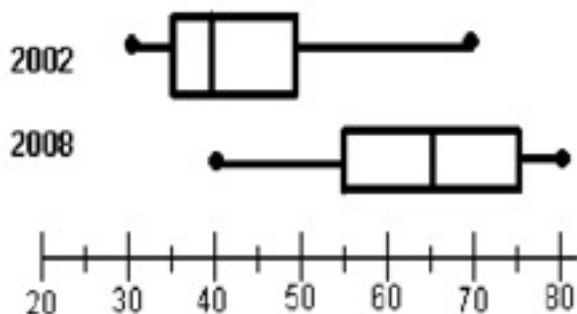   39, 54, 98, 79, 89, 19, 62, 92, 75, 74, 86, 46

20) The two sets of test scores below are from the Unit 1 Test and Retest.

    Test: 13, 29, 45, 42, 47, 49, 50, 64
    Retest: 14, 79, 80, 82, 83, 85, 89, 95

    How do the measures of central tendency compare for the two test scores?

    What might have affected the mean for the second set of data? Why?

21) The following plots shows voting outcomes from the Georgia public election in 2002 and 2008.

Find the following summary statistics for each year.

	2002	**2008**
Median:	_____	_____
Maximum:	_____	_____
Minimum:	_____	_____
Q1:	_____	_____
Q3:	_____	_____
IQR:	_____	_____

MM1D3b

The table below shows the average for each unit test for each Math 1 teacher at AHS and the averages for all Math 1 students in Butts County.

	Unit 1		Unit 2		Unit 3		Midterm	
Teacher Name	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Hamsterback	52	65	63	47	48	47	37	42
Platard	64	70	75	72	66	68	70	72
Scampi	86	83	99	94	95	90	91	95
Wyhoou	100	100	100	100	100	100	100	100
Butts County Math 1	**75**	**70**	**68**	**70**	**77**	**70**	**73**	**70**

22) What is the average of the sample means for the Unit 1 test scores? How does it compare to the population average?

23) What is the average of the sample medians for the Midterm test scores? How does it compare to the population average?

MM1D3c

24) You are thinking about starting a Math Club. Which would give a better representative sample?
   a. polling the football team
   b. polling the students making an A in math class
   c. giving a survey to each student during advisement
   d. surveying the students walking down K Hall

MM1D4

25) What is the mean absolute deviation of the following data set?   18, 26, 4, 16, 20