MATH 2625, Test 2 Review. **Name _____**

1. How many ways can five pictures be arranged to hang on the wall in a row?

2. If a basketball team has 9 players, how many different possible five-player combinations can he formed?

3. There are five male and four female students. How many ways can a committee of three be formed so that they all are of the same sex?

4. How many ways can a teacher select three books from a possible choice of 10 textbooks for his class?

5. A test contains 6 true-false questions. If a student guesses on all ten questions, what is the probability that he would have 2 questions answered correctly?

6. All human blood can be typed as one of O, A, B, or AB. The distribution of the types varies a bit with race. *Choose an Asian at random*. Here are the approximate probabilities that the person you choose will have blood type O, B, or AB.

Blood Type	O	A	B	AB
Probability	.3	.15	?	.06

Using the above data to answer the following questions.

a) What is the probability that the person chosen has blood type B?

b) What is the probability that the person chosen has a blood type AB?

7. A hospital system has two locations A and B. The record of cases accepted in each location for a particular day is shown in the following table.

	A	B
Emergency Case	16	34
Regular Case	29	21

a) If one visit is selected at random, what is the probability that it was at location A or a regular case?

b) If an emergency case is selected at random, what is the probability that it was at location A?

8. Find the area below the standard normal curve in the following ranges:

a) Below .05.

b) Between –1.23 and 2.54.

9. The YSU students' GPA scores follow a normal distribution with a mean 2.7 and a variance 0.49.
   a) Find the percentage of YSU students having GPA above 3.5.

   b) Find the 65^{th} percentile of YSU student's GPA.

   c) If 144 students are selected what is the probability that the average GPA is less than 3.0?

10. The probability distribution of the six faces of an unbalanced die is given in the following table. A game is designed so that the player will lose 2 dollars when an even number occurs, and win 1 dollar when one or three occurs, and win 3 dollars when five occurs.

Points	1	2	3	4	5	6
Outcome, x_i	\$1	–\$2	\$1	–\$2	\$3	–\$2
Probability, $P(x_i)$	.1	.2	.3	.1	.2	.1

   a) What is the probability of winning 1 dollar in a game?

   b) What is the probability of winning 1 dollar given that an odd number is rolled?

   c) What is the expected value (average winning) of this game to the player? Is it a favorable game to players?