Math 1100 – Fall 2006   Name_____
Frauenholtz   TEST 2 - REVIEW
For full credit **show all your work**. Each problem is worth four points.

1) List the sample space for selecting a day from the days of the week.

2) How many elements are in the sample space when selecting two digits from 1, 2, 3, and 4 with replacement?

3) How many elements are in the sample space when selecting a meal from two salads, three entrees, and three desserts?

4) Among the 4,218 students at BSU I want to choose three of them for prizes. First prize is a pound of M&M's, second prize is a Krispy Kreme doughnut, third prize is an ornery donkey. How many different ways can I choose three BSU students? Assume no replacement.

5) From a class of 36 students I want to choose a committee of four students to help me determine which homework exercises to assign. How many different possible committees could there be?

6) The coast guard uses signal flags as a method of communicating between ships. If four different flags are available and the order in which the flags are raised is important, how many different signals are possible? Assume all flags are raised.

7) Six points are drawn on a paper, no three of which are on the same straight line. How many different lines can be drawn through the six points?

8) A math professor downloaded five music files to his Ipod . In how many different orders can the songs be played?

9) A group has six members. In how many ways can the six members be divided into groups of two people?

Age / Work Status	Full-time	Part-time	Unemployed
0 – 17	24	164	371
18 – 25	185	203	148
26 – 34	348	67	27
35 – 49	581	179	104
50 +	443	162	173

Table 1 – Age and work status.

10) Calculate the probability that someone in the group is 26 – 34 years of age.

11) Calculate the probability that someone in the group is employed part-time?

12) Calculate the probability that someone in the group is 26 – 34 years of age AND employed part-time.

13) Calculate the probability that someone in the group is employed part-time given they are 26 – 34 years of age.

14) In the Krazy Dice game, which is free to play, the player wins $3 if a one or two is rolled; wins $5 if a three or four is rolled; wins $7 if a five is rolled; and wins $10 if a six is rolled. Calculate the expected winnings for one play of the game.

15) What would be a "fair" price to charge people to play the Krazy Dice game?

16) If it costs $4 to play "Lucky Toss" and a head wins $1 and a tail wins $6 then calculate the player's expectation.

17) Suppose it costs your answer from #2 to play Krazy Dice (it was free but I lost too much money and I have to think about Ben's college tuition fund now). If you had to play one of the games (either Krazy Dice or Lucky Toss) then which game would you play. Explain why.

88	77	74	80	65	76	71	92	90	68	64	81
72	89	66	83	78	74	91	73	74	82	77	76
85	64	43	91	94	39	60	78	61	88	58	81

Table 2

18) The data in Table 2 represent our class scores. Give three measures indicating the center of the group.

19) Calculate the MAD for our class test scores. (MAD is Mean Absolute Deviation)

20) Calculate the standard deviation for our class test scores.

21) If I scored the 88 that is highlighted above, what would be my z-score?

(Recall: $z_x = \dfrac{x - \bar{x}}{\sigma}$)

22) Use the data in the table to construct a regression line for the data. Round coefficients to the hundredths (two decimal places) and use your equation to predict the value of a corvette with an odometer reading of 15,000 miles.

Odometer	Retail Value
13,000	$46,100
18,000	$44,600
20,000	$43,300
25,000	$41,975
29,000	$40,975
32,000	$39,750

Equation:

Value of a corvette with 15,000 miles:

23) What percent of the people are within one standard deviation of the mean? Explain.

24) The following data are provided by our textbook and represent the median weekly earnings, in dollars, for women and men for selected years from 1980 to 2002:

	1980	1985	1990	1995	2000	2002
Women	415	442	462	476	513	530
Men	540	547	550	561	601	609

I plugged these numbers into my calculator (putting women on the x-axis and men on the y-axis). I found the following regression equation and graph:

```
LinReg
y=ax+b
a=.6565993121
b=257.4285254
r²=.9183070508
r=.9582833875
```

```
WINDOW
Xmin=300
Xmax=650
Xscl=50
Ymin=300
Ymax=650
Yscl=50
Xres=1
```
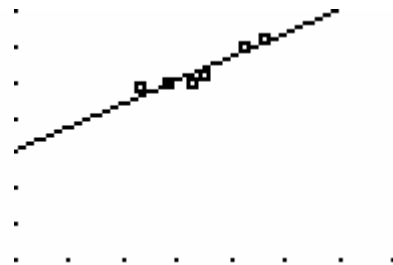

Now the year is 2006 and my weekly salary is $631.88. How would I use the equation y = .6565993121 x + 257.4285254 with my salary to find Kerry's salary in 2006?