EPPS 2302 : QUIZ #2

To get full credit for your answer, you must show your work. Use the space provided on this sheet to show your work.

Problem 1(20pt)

1 Suppose that E and F are two events and that P(E and F) = 0.48 and P(E) = 0.5. What is P(F|E)?

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P(E and F) = P(E)*P(F|E). -> 0.48 = 0.5 * P(F|E)
P(F|E) = 0.96
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2 Suppose that E and F are two events and that P(E) = 0.4 and P(F|E) = 0.8. What is P(E and F)?

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P(E and F) = 0.32
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Problem 2(20pt)

The managers of a corporation were surveyed to determine the background that leads to a successful manager. Each manager was rated as being either a good, fair, or poor manager by his/her boss. The manager's educational background was also noted. The data appear below. Given that a manager is only a fair manager, what is the probability that this manager has no college background?

	Educational Background				
Manager Rating	H. S. Degree	Some College	College Degree	Master's or Ph.D.	Totals
Good	8	3	22	6	39
Fair	7	11	44	25	87
Poor	2	4	1	27	34
Totals	17	18	67	58	160

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P(no college | Fair) = P(no college and Fair) / P(Fair)
7/87
```

Problem 3(10pt)

If P(A) = 1/3, P(B) = 1/2 and P(A∪B) = 3/4,
Find P(A^c∩B)
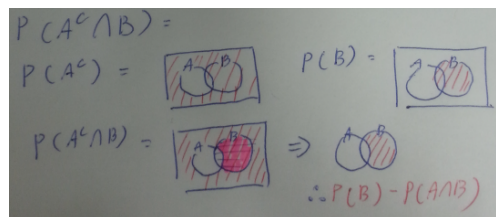

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1/2 - 1/12 = 5/12
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Problem 4(20pt)

Determine the area under the standard normal curve that lies between:

1 $z = 1$ and $z = 2$

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0.9772-0.8413 = 0.1359
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2 $z = 0.3$ and $z = 1.4$

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0.9192 - 0.6179 = 0.3013
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Problem 5(20pt)

Assume that the random variable X is normally distributed, with mean $\mu = 50$ and standard deviation $\sigma = 16$.

1 Compute the probability $P(6 < X < 70)$.

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-2.75 < z < 1.25
-2.75 < z < 0 => 0.497
0< z < 1.25 = 0.3944
0.497 + 0.3944 = 0.8914
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2 Compute the probability $P(X = 80)$.

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We cannot compute it
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Problem 6(10pt)

Assume that blood pressure readings are normally distributed with a mean of 122 and a standard deviation of 6.4. If 64 people are randomly selected, find the probability that their mean blood pressure will be less than 124.

$z = \frac{124-122}{\frac{6.4}{\sqrt{64}}} = 2.5$

$P(z < 2.5) = 0.9938$