MATH 118 **Sections 4.1, 4.2 Sample Exam** NAME:
Class ID # :

1. A student attends mathematics class with probability 0.5, skips accounting class with probability 0.2. If attending those classes are independent, find the probability that she attends at least one class.
[A] 0.9
[B] 0.8
[C] 0.6
[D] 0.7
[E]None of the above

Problems 2- 3 refer to the following question:
Using the digits 0,1,2,3,5 and 7. If three digits are selected, find the probability that the number:

2. Is larger than 500 with no repetition
[A] 1/2
[B] 1/3
[C] 2/3
[D] 1/6
[E]None of the above

3. Contains both odd and even digits with **no** repetition
[A] 2/5
[B] 3/5
[C] 1/5
[D] 4/5
[E]None of the above

4. Tom is planning to visit Miami, Chicago, Denver, Indianapolis and Houston. Find the probability that he visits Miami and Chicago in consecutive stops but in either order.
[A] 4/5
[B] 2/5
[C] 1/5
[D] 3/5
[E]None of the above

5. Two people are selected from a group of 3 men and 2 women. Find the probability that both are men given that both are of the same sex.
[A] 0.75
[B] 0.30
[C] 0.40
[D] 0.50
[E]None of the above

6. If $P(A) = 0.4$, $P(B) = 0.3$ and the events A and B are independent. Find $P(A \cup B)$.
[A] 0.12
[B] 0.70
[C] 0.58
[D] 0.75
[E]None of the above

7. If $P(A \cup B) = 0.7$, $P(A) = 0.6$ and $P(B|A) = 0.2$, find $P(B)$.
[A] 0.20
[B] 0.32
[C] 0.22
[D] 0.12
[E]None of the above

Problems 8 - 9 refer to the following question:

A pair of dice are rolled and the numbers are noted. What is the probability that:

8. the sum is 6 given that they include same numbers on both dice

[A] 5/36
[B] 1/5
[C] 5/6
[D] 1/6
[E]None of the above

9. both are larger than 2 given that the sum is 6

[A] 5/36
[B] 1/5
[C] 5/6
[D] 1/6
[E]None of the above

10. Using the numbers 1,2,3,4,5,6,7,8,9,10 and 11. If one number is selected, what is the probability that it is less than 4 **or** odd?

[A] 7/11
[B] 8/11
[C] 9/11
[D] 6/11
[E]None of the above

11. Let *A*, *B* and *C* be events which form partition of a sample space *S*. If P(*A)* = 2P(*B)*, P(*C)*= 2P*(B)*. Find P(A $\cup$ B).

[A] 13/25
[B] 3/5
[C] 2/5
[D] 1/5
[E]None of the above

12. In a box there are 6 red, 5 blue and 4 white balls. If 4 balls are selected at random and the color are noted. Find the probability that none is blue given that none is white.

[A] $\frac{C(10,4)}{C(15,4)}$ [B] $\frac{C(6,4)}{C(15,4)}$

[C] $\frac{C(6,4)}{C(11,4)}$ [D] $\frac{C(10,4)}{C(11,4)}$ [E]None of the above

Problems 13-14 refer to the following question Mark and his wife are taking a picture with 4 other people standing in a row. Find the probability that:

13. Mark and his wife will be standing at each end of the row

[A] 1/3
[B] 1/6
[C] 5/6
[D] 1/15
[E]None of the above

14. Mark and his wife will be standing next to each other

[A] 1/3
[B] 1/6
[C] 5/6
[D] 1/15
[E]None of the above

Problems 15-18 refer to the following question: 5 cards to be selected out of 52, What is the probability that:

15. They are same color

[A] $\frac{C(26,5)}{C(52,5)}$ [B] $\frac{C(2,1).C(26,5)}{C(52,5)}$

[C] $\frac{C(4,1).C(13,5)}{C(52,5)}$ [D] $\frac{C(13,5)}{C(52,5)}$ [E]None of the above

16. They are same suit

[A] $\frac{C(26,5)}{C(52,5)}$ [B] $\frac{C(2,1).C(26,5)}{C(52,5)}$

[C] $\frac{C(4,1).C(13,5)}{C(52,5)}$ [D] $\frac{C(13,5)}{C(52,5)}$ [E]None of the above

17. They contain all suits

[A] $\frac{C(4,1)C(13,5)}{C(52,5)}$ [B] $1-\frac{C(4,1)C(13,5)}{C(52,5)}$

[C] $\frac{C(4,1).C(13,1)^3.C(13,2)}{C(52,5)}$ [D] $\frac{C(4,1).C(13,1)^4}{C(52,5)}$ [E]None of the above

18. They contain more than one suit

[A] $\frac{1-C(4,1)C(13,5)}{C(52,5)}$ [B] $1-\frac{C(4,1)C(13,5)}{C(52,5)}$

[C] $\frac{C(4,1).C(13,1)^4}{C(52,5)}$ [D] $\frac{C(4,1).4.C(13,1)}{C(52,5)}$ [E]None of the above

19. A survey of 20 people found: 5 Republican male, 4 Republican females, 4 Democrat males and 7 Democrat female. If 4 people are selected, find the probability that they are they are same sex given that exactly two are Republican.

[A] $\frac{C(5,2)C(4,2)}{C(9,2)C(11,2)}$ [B] $\frac{C(4,2)C(7,2)}{C(9,2)C(11,2)}$

[C] $\frac{C(5,2)C(4,2)+C(4,2)C(7,2)}{C(9,2)C(11,2)}$ [D] $\frac{C(9,4)+C(11,4)}{C(9,2)C(11,2)}$ [E]None of the above

20. In a box there are 5 red, 6 blue and 4 white balls. If 4 balls are selected at random and the color are noted. Find the probability that at least 2 are red given that they are not same color..

[A] $\frac{C(5,2)C(10,2)+C(5,3).C10,1)}{C(15,4)-C(5,4)-C(6,4)-C(4,4)}$ [B] $\frac{C(5,2)C(10,2)+C(5,3).C10,1)}{C(5,4)+C(6,4)+C(4,4)}$

[C] $\frac{C(5,2)C(10,2)+C(5,3).C10,1)+C(5,4)}{C(15,4)-C(5,4)-C(6,4)-C(4,4)}$ [D] $\frac{C(5,2)C(10,2)+C(5,3).C10,1)+C(5,4)}{C(5,4)+C(6,4)+C(4,4)}$

[E]None of the above

21. The odds against winning a $10 prize are 100:1. Find the probability of winning $10 on two tickets.

[A] 0.192 [B] 0.0196

[C] 0.002 [D] 0.0022 [E]None of the above

22. The probability of winning a game is 1/5. Find the odds against winning (odds for loosing).

[A] 4:1 [B] 1:4

[C] 4:5 [D] 5:4 [E]None of the above

MATH 118 **TEST 3** **NAME:**
Class ID # :

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1. A B C D E	**12. A B C D E**
2. A B C D E	**13. A B C D E**
3. A B C D E	**14. A B C D E**
4. A B C D E	**15. A B C D E**
5. A B C D E	**16. A B C D E**
6. A B C D E	**17. A B C D E**
7. A B C D E	**18. A B C D E**
8. A B C D E	**19. A B C D E**
9. A B C D E	**20. A B C D E**
10. A B C D E	**21. A B C D E**
11. A B C D E	**22. A B C D E**