**HW 3 - COMPOUND PROBABILITY HW Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Determine if the following events are dependent or independent:

1. throwing a 4 with one die and a 6 with another 2. picking an ace from a deck of cards, keeping it,

and then picking a jack.

3. Flipping a tail with a coin and rolling a 4 4. drawing a spade and drawing a heart from the same

with a die deck without replacing the first card.

5. picking two black marbles from a bag, after 6. flipping tails with a coin and then flipping it heads

replacing the marble after the first pick

7. Two letters are chosen, without replacement, at random from the English alphabet. If Y is considered to be a consonant, find the probability that

a) both are vowels b) both are consonants

8. A bag contains 4 white, 2 blue, and 6 red marbles. A marble is drawn from the bag, replaced, and another marble is drawn. Find the following:

a) P(both are red) b) P(red, then white)

c) P( a red and a white) d) P(at least one blue)

*Now you are drawing three marbles without replacement:*

e) P (2 blues and a red) f) P(at least one red)

9. Messy Mike has a sock drawer containing 3 blue socks, 5 white socks, and 2 black socks. He gets dressed in the dark because school starts way too early, so he never looks to see which socks he’s pulled from the drawer. Find the following:  
a) P(both blue) b) P(both white)

c) P(blue and black) d) P(no black)

e) P(both socks match) f) P(both socks do not match)

10. Fifteen airmen are in the line crew. They must take care of the coffee mess and line shack cleanup. They put slips numbered 1 through 15 in a hat and decide that anyone who draws a number divisible by 5 will be assigned the cof­fee mess and anyone who draws a number divisible by 4 will be assigned cleanup. The first person draws a 4, the second a 3, and the third draws an 11. What is the probability that the fourth person to draw will be assigned  
a) the coffee mess? b) the cleanup?

11. Anthony’s class consists of 19 girls and 15 boys. If 5 students are to be selected at random, determine the probability that they are all girls.

12. Anthony’s church group consists of 10 girls and 9 boys. If 5 of the students are to be selected at random, determine the probability that 3 boys and 2 girls are selected.

13. Anthony just got paid and now his wallet contains 11 bills of the following denominations: four $5 bills, five $10 bills, one $20 bill, and one $50 bill. If Anthony selects five bills at random, find the probability that he selects two $5 bills and 3 $10 bills.

14. Anthony plays cards with his Meemaw every Wednesday afternoon. If Meemaw draws three cards randomly from a standard deck of cards, find the probability that they are two hearts and a spade.

15. Of 35 people attending Anthony’s NHS meeting, 28 are seniors. If 4 people at the meeting are selected at random, find the probability that the group includes 3 seniors.

16. Back to Anthony and his money again. Now his wallet contains 9 bills of the following denominations: three $5 bills, four $10 bills, and two $20 bills. In case you’re wondering, he spent the $50 on his girlfriend’s birthday present. If Anthony selects three bills at random, find the probability that he selects at least one $5 bill.

17. Meemaw is drawing cards again. If she draws five cards at random from a standard deck, find the probability that the cards drawn include 2 face cards and 3 red number cards.