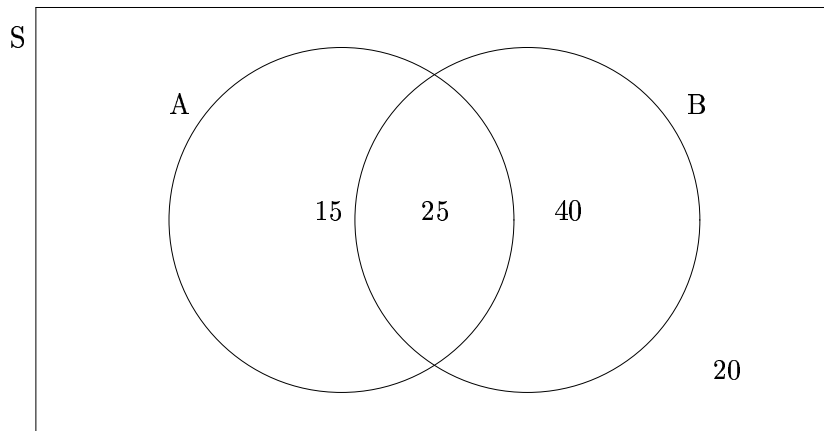


4. Refer to the Venn diagram below for events A and B respectively, in an equally likely sample space S . (8 pts)



Find the indicated probabilities.

(a) $P(A \cup B)$

(b) $P(A \cap B)$

5. A single card is drawn from a standard 52 card deck. What is the probability that the card drawn is either a King or a 10? (8 pts)

6. An experiment consist of dealing 5 cards from a standard 52 card deck. What is the probability that the hand will have exactly two red and three black cards? (8 pts)

7. A (fair) coin is flipped three times. What is the probability of getting exactly two tails? (8 pts)

8. A group of 25 people contains 10 brunettes, 8 blondes, and 7 redheads. Of the twenty girls in the group 8 are brunettes, 6 are blondes and 6 are redheads. Select one person at random. Let

- G be the event that a girl is chosen, and
- H be the event that a brunette is chosen.

Are the events G and H independent? Why or why not? (8 pts)

9. A box contains seven red balls and three white balls. Two balls are drawn in succession without replacement.

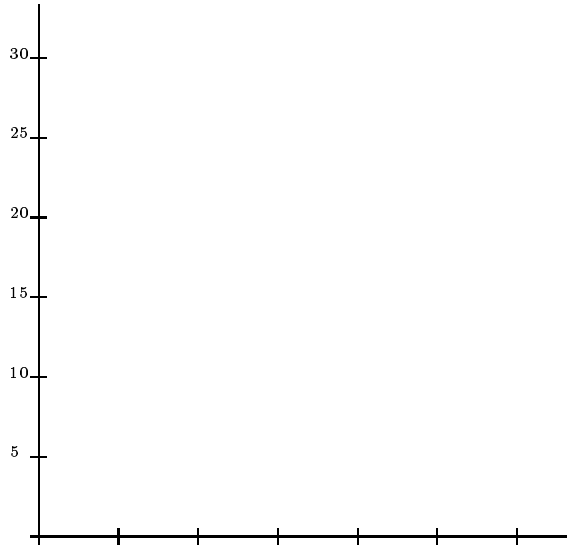
(a) What is the probability that both balls are white? (5 pts)

(b) What is the probability that the first ball is white and the second ball is red? (5 pts)

(c) What is the probability that the second ball is red given that the first ball was white? (5 pts)

10. Construct a histogram for the following frequency table (make sure you label the horizontal axes) then find the mean of the data. (8 pts)

Class Interval	Frequency
0.5-1.5	6
1.5-2.5	21
2.5-3.5	16
3.5-4.5	4
4.5-5.5	3



11. Dr. Mad Scientist gave an exam in his calculus class. He had 6 students and they got the following test scores.

66, 73, 77, 87, 96, 99

(a) Find the median test score. (5 pts)

(b) Find the mean test score. (5 pts)

(c) Find the standard deviation of the test score. (5 pts)