Foundations 12 Name: _____

Ch. 5 Extra Practice

1. Suppose that at the beginning of the season the odds in favour of the Canucks winning the Stanley Cup are estimated to be 1:99.

   a) Estimate the probability that the Canucks will win the Stanley Cup. $\boxed{\frac{1}{100}}$

   b) Estimate the odds against the Canucks winning the Stanley Cup. $\boxed{\frac{99}{100}}$

2. A bag of marbles contains 2 red marbles, 3 blue marbles and 5 green marbles.

   a) What is the probability of choosing a green marble? $\frac{5}{10} = \boxed{\frac{1}{2}}$

   b) What are the odds in favour of choosing a blue marble? $\boxed{3:7}$

   c) What are the odds against choosing a red marble? $8:2 = \boxed{4:1}$

3. Alex, Brian and Cole are running in a 10 person race. Determine the probability that they will come in 1st, 2nd and 3rd place, respectively.

   $\hookrightarrow {}_{10}P_3 = 720 \Rightarrow \boxed{\frac{1}{720}}$

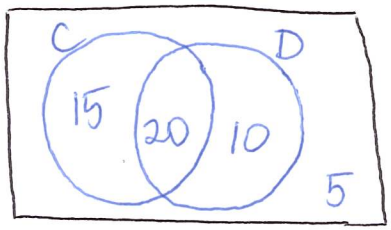
4. In the game of Crazy Eights, each player is dealt 8 cards from a well-shuffled standard deck of 52 playing cards. Determine the probability that a player is dealt:

   a) all hearts. $\Rightarrow \frac{{}_{13}C_8}{{}_{52}C_8} = \boxed{\frac{1287}{752538150} = \frac{11}{6431950}}$

   total

6. Jamal asked 50 people what type of television shows they like. 15 people like comedy shows, but not drama shows. 10 people like drama shows, but not comedy shows. 5 people liked neither type of show.

a) Draw a Venn diagram of these sets.



$15+10+5=30$

20 missing = overlap

b) What is the probability that a randomly selected person liked both types of shows?

$P(C \cap D) = \frac{20}{50} = \boxed{\frac{2}{5}}$

7. Which of the following are mutually exclusive events?

a) Rolling a double or rolling a sum of 4 when rolling two dice. No e.g. (2,2)

b) Rolling a sum of 3 or a sum of 4 when rolling two dice. Yes

c) Drawing a red card or a spade from a standard deck of 52 playing cards. Yes

d) Drawing a black card or a spade from a standard deck of 52 playing cards. No e.g. spades are black!

8. Enzo rolls two standard dice. Determine the probability of each event.

	1	2	3	4	5	6
1	(1,1)	(1,2)	(1,3)	(1,4)	(1,5)	(1,6)
2	(2,1)	(2,2)	(2,3)	(2,4)	(2,5)	(2,6)
3	(3,1)	(3,2)	(3,3)	(3,4)	(3,5)	(3,6)
4	(4,1)	(4,2)	(4,3)	(4,4)	(4,5)	(4,6)
5	(5,1)	(5,2)	(5,3)	(5,4)	(5,5)	(5,6)
6	(6,1)	(6,2)	(6,3)	(6,4)	(6,5)	(6,6)

a) Rolling a double or rolling a sum of 4. $\boxed{\frac{8}{36} = \frac{2}{9}}$

6 + 3 −1 (2,2)

b) Rolling a sum of 3 or a sum of 4. $\boxed{\frac{5}{36}}$

2 + 3

c) Rolling a sum less than 3 or a sum greater than 10. $\boxed{\frac{4}{36} = \frac{1}{9}}$

1 + 3