

Name: \_\_\_\_\_

Show work needed to justify your answer.

Date: \_\_\_\_\_

HW: # 32b: Math IBSL - Standard 31 - Venn Diagrams and Sample Spaces

5 points

1 Here are some events relating to throwing two dice:

A: Both dice show a 4.

B: The total is 7 or more.

C: There is at least one 6.

D: The two dice show the same number.

E: Both dice are odd.

Which of these pairs of events are mutually exclusive?

**a** A and B    **b** A and C    **c** A and D

**d** A and E    **e** B and E    **f** C and D

**g** B and C

2 Two events  $N$  and  $M$  are such that  $P(N) = \frac{1}{5}$

and  $P(M) = \frac{1}{10}$  and  $P(N \cup M) = \frac{3}{10}$ . Are  $N$

and  $M$  mutually exclusive?

3 In an inter-school quiz, the probability of School A winning the competition is  $\frac{1}{3}$ , the

probability of school B winning is  $\frac{1}{4}$  and

the probability of school C winning is  $\frac{1}{5}$ .

Find the probability that:

**a** A or B wins the competition.

**b** A, B or C wins the competition.

**c** Are there any other schools in the competition? How do you know?