Name: _____ **Show work needed to justify your answer.** Date: _____

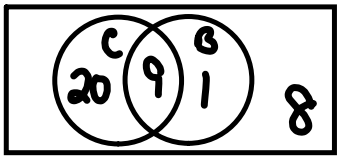
HW: # 32: Math IBSL - Standard 31 - Venn Diagrams and Sample Spaces

5 points

---

1 In a group of 38 students, 29 play computer games, 10 play board games and 9 play both.

a Draw a Venn diagram to represent this situation.



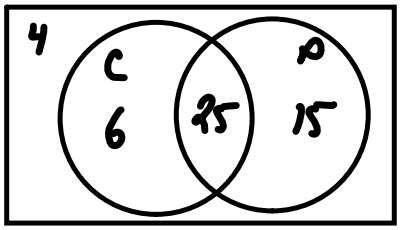
A student is selected at random.

b Find the probability that the student plays neither computer games nor board games.

(b) $\frac{8}{38}$ or $\frac{4}{19}$

---

3 A group of 50 people were asked whether they gave their partner a card or a present on their last birthday. The results were: 31 gave a card, 40 gave a present and 25 gave both a card and a present. If one of the people was chosen at random, determine the probability that they gave:



a a card or a present

a) $\frac{46}{50} = \frac{23}{25}$

b a card but not a present

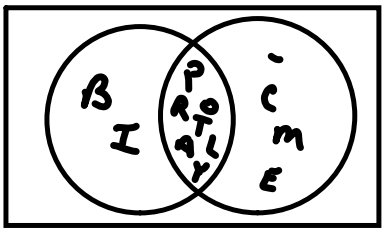
b) $\frac{6}{50}$ or $\frac{3}{25}$

c neither a card nor a present.

c) $\frac{4}{50} = \frac{2}{25}$

---

4 Set A contains letters needed to spell the word PROBABILITY and set B contains the letters needed to spell the word COMPLEMENTARY.



a Draw a Venn diagram for the two sets A and B.

b What is in the intersection of A and B?

{P, R, O, L, A, T, Y}

c What is in the union of A and B?

{B, I, P, R, O, L, A, T, Y, C, M, E}

---

5 If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $A = \{2, 4, 6, 8, 10\}$ and $B = \{3, 6, 9\}$, list the members of the following sets:

a $A \cap B$

a) {6}

b $A \cup B$

b) {2, 3, 4, 6, 8, 9, 10}

c A'

c) {1, 3, 5, 7, 9}

d $A' \cap B$

d) {3, 9}

e $A \cup B'$

e) {1, 2, 4, 5, 6, 7, 8, 10}

f $A' \cup B'$

f) {1, 2, 3, 4, 5, 7, 8, 9, 10}

B' {1, 2, 4, 5, 7, 8, 10}

Name: _____ **Show work needed to justify your answer.** Date: _____

HW: # 32: Math IBSL - Standard 30 - Theoretical and Experimental Probability

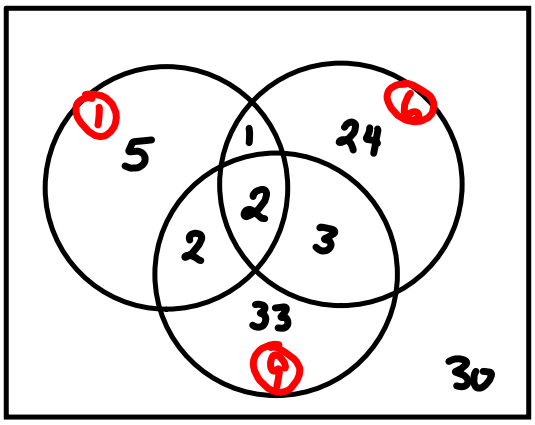
5 points

---

7 In a town, 10% of the population watch the news at 1 pm, 30% of people watch the news at 6 pm and 40% of people watch the news at 9 pm.

It is found that 5% watch at both 6 pm and 9 pm, 4% watch at both 1 pm and 9 pm, 3% watch at 1 pm and 6 pm, and 2% of the people watch all three news shows.

a Complete a Venn diagram to show this information. For this Venn diagram, you will need three circles, one for each time the news is on.



b Find the probability that a person chosen at random from the town:

i watches only the news at 9 pm 33%.

ii watches only the news at 6 pm 24%.

iii does not watch the news. 30%.