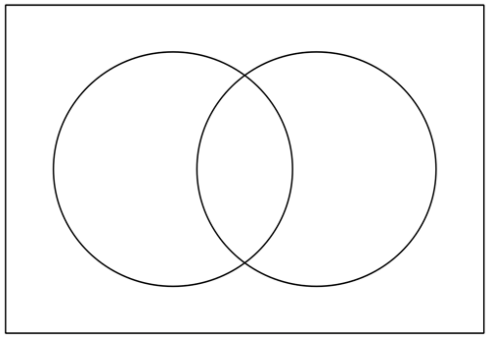
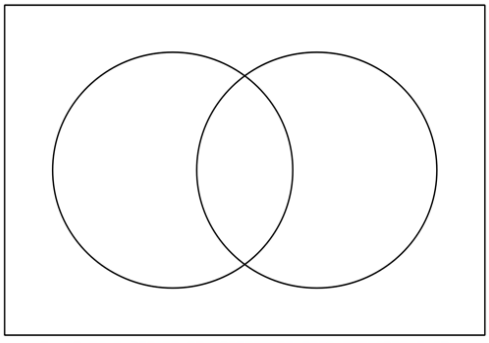
QUESTION **1** The numbers from 1 to 10 are written on 10 cards and out of these a card is chosen at random. Draw a Venn diagram to find the probability of the number on the card being

a less than 3 or divisible by 5 _____

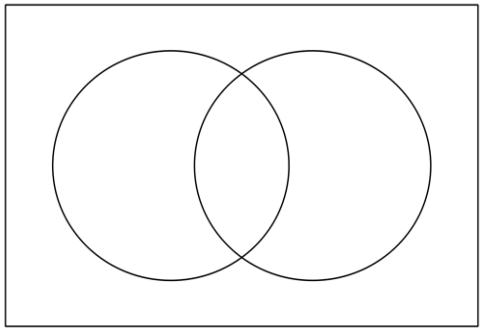


b less than 5 or divisible by 2 _____

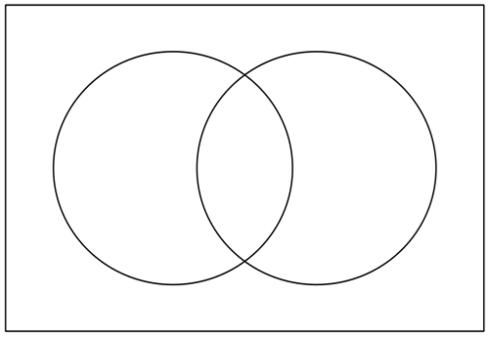


QUESTION **2** The numbers from 1 to 20 are written on 20 cards and out of these a card is chosen at random. Draw a Venn diagram to find the probability of the number on the card being

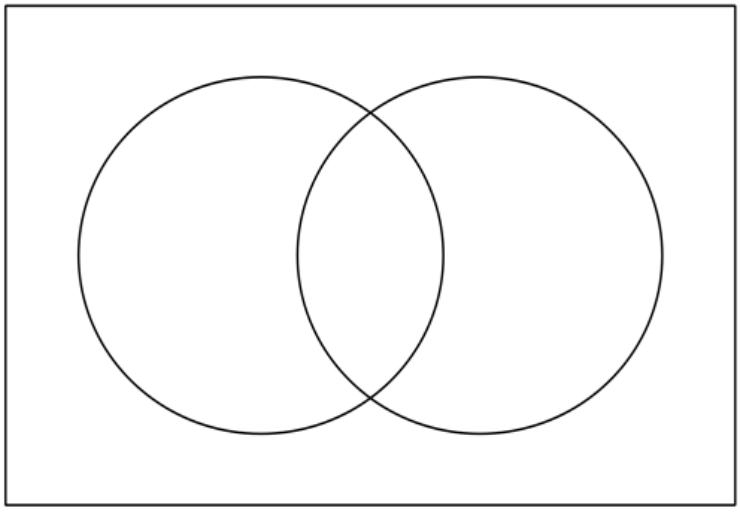
a less than 4 or divisible by 5 _____



b less than 8 or divisible by 3 _____



In a class of 30 students, 15 like Rap, 18 like K-pop, and 7 like Rap and K-Pop. Represent this information on a Venn diagram below



What is the probability that a student selected at random likes:

i) Rap

ii) K-pop

iii) Rap, but not K-pop

iv) neither Rap nor K-pop

v) Rap and K-pop

12 boys and 16 girls are asked if they like Ariana Grande.
13 girls and 7 boys like this singer. Represent this information on the two-ways table below.

What is the probability of:

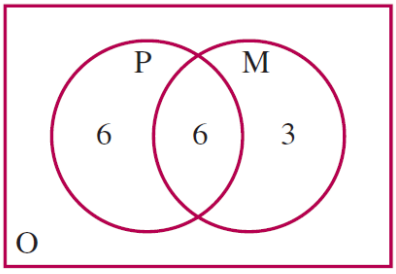
i) a boy likes Ariana Grande

ii) a boy doesn't like Ariana Grande

iii) a girl likes Ariana Grande

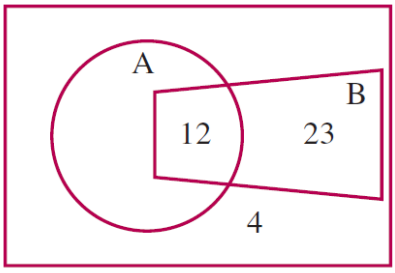
iv) A student picked at random in this set likes Ariana Grande

5 This Venn diagram shows the choices made by a group of 15 friends who were all keen to go to a particular movie, M, on Friday night and were also invited to a party, P, on Saturday night. What is the probability that a person chosen at random:



a went to both party and movie?
b went to the movie but not the party?
c went to the party?
d did not attend either movie or party?

8 The Venn diagram contains a total of 40 members. Find the probabilities:



a $P(B)$
b $P(A)$
c $P(\tilde{A})$
d $P(B$ but not $A)$
e $P($neither B nor $A)$.

11 In a group of 20 families, 5 families took overseas holidays between 2006 and 2010. 16 of the families took interstate holidays within Australia during this time, and two families did not travel overseas nor interstate. Draw a Venn diagram to illustrate this information.