



CSEE- Basic Maths

Algebra & Sets

Questions and Answers

Videos with expert tutorials on each topic

CSEE Basic Maths

Revision Topic: Algebra & Sets

Section A

Lesson 2 (Revision Week 1)

Instructions: Complete this worksheet and watch this revision video simultaneously on

www.mathsmemory.co.uk/International

Pause and Play the video unlimited times to review your work and write the answers in the blank spaces.

Once you have written your answers, check these with the tutorial answers, as explained in the video.

Self Assess yourself (Out of 10) on your **revision planner** after you have completed the revision video .

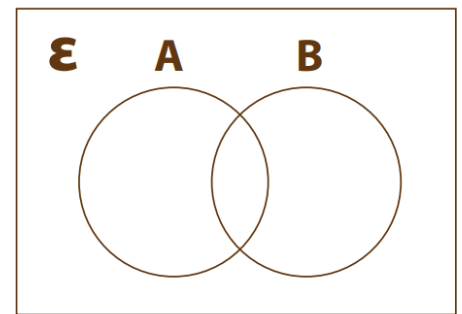
Question 1

$\mathcal{E} = \{3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$

$A = \{\text{Odd Numbers between 3 and 12}\}$

$B = \{\text{Multiples of 3 between 3 and 12}\}$

a) Complete the Venn diagram to represent this information.



b) A number is chosen at random from the universal set $\mathcal{E}$.
Find the probability that the number is in the set $A \cap B$

Bronze



Question 2

a) Factorise $3x^2 + 4x - 4$

Hence solve $3x^2 + 4x - 4 = 0$

b) Solve $6x^2 - 7x - 3 = 0$

c) Solve $8x^2 - 12x$

Bronze


Question 3

a) Solve $3n - 5 > 22$

b) Solve $7n - 2 \leq 4n + 7$

c) Solve $\frac{2}{5}n - 2 \geq \frac{1}{4} + 1$

Bronze


Question 4

Here is a Venn diagram.

Write down the numbers that are in the set;

a) $A \cap B$

b) $A \cup B$

c) B'

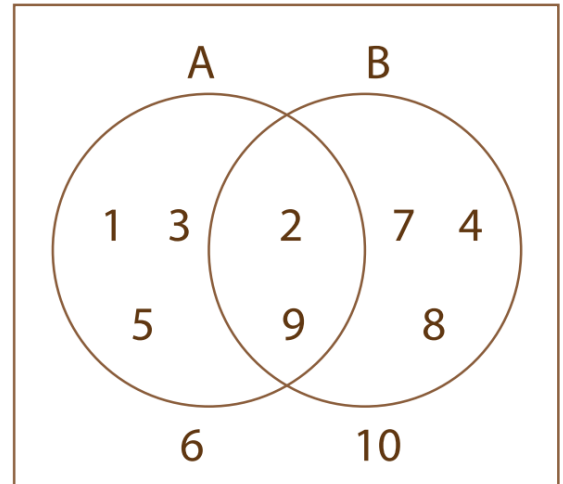
d) $A \cap B'$

e) $A \cup B'$

A number is chosen at random.

f) Find $P(A' \cap B')$

g) Find $P(A' \cup B')$



Silver



Question 5

Here is a Venn diagram.

There are 55 pupils enrolled for a sports club. 28 are enrolled for Football and 30 are enrolled for Tennis. 8 are enrolled for both of these sports.

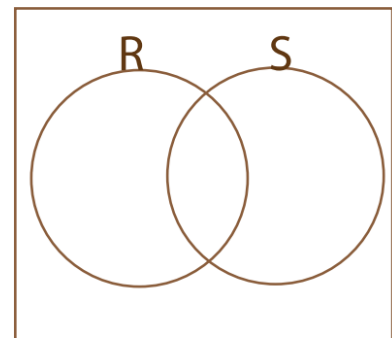
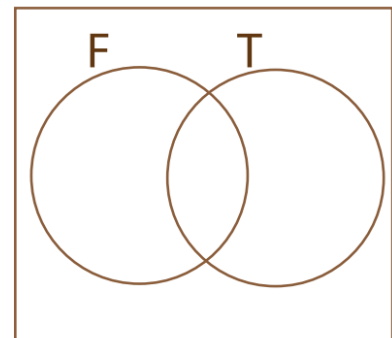
(a) By using a Venn diagram, find the number of pupils who choose neither sport.

b) In a class of 50 students, 15 students enjoy reading, 30 enjoy sports and 10 enjoy neither.

(i) Represent this information in a Venn diagram.

Using part b (i) find;

(ii) the number of students enjoying both subjects



Silver



Question 6

$$\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$$

$$A = \{ \text{Multiples of 3} \}$$

$$B = \{ \text{Even Numbers} \}$$

a) Complete the Venn diagram to represent this information.

Write down the numbers that are in the set

b) $A \cap B$

c) $A \cup B$

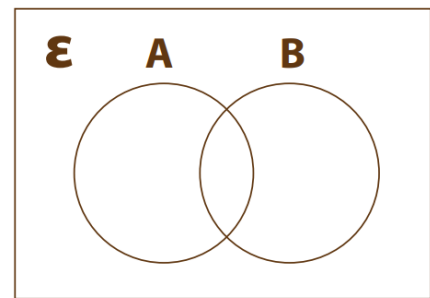
d) A'

e) $A' \cap B$

f) $A' \cup B$

g) Find $n(A' \cap B')$

h) Find $n(A' \cup B')$



Silver



Question 7

Here is a Venn diagram.

In a certain school, 36 students were asked whether they would choose Physics or Maths for advanced studies. The number of students who chose Physics and Maths was double the number of students that chose Physics only. Furthermore, the number of students who chose Maths was 4 more than triple the number of students that chose Physics. However, 2 students chose neither Physics or Maths.

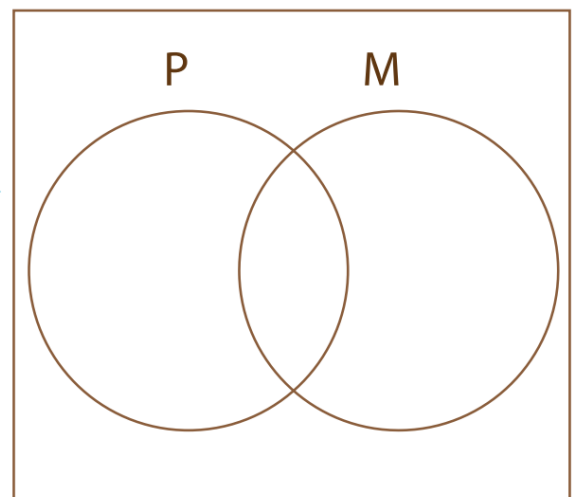
a) Represent this information on a Venn diagram, letting x be the number of students that chose Physics only.

b) Use the results obtained in part (a) to determine a student selected at random likes;

(i) Maths only

(ii) Physics and Maths

(iii) Physics or Maths



Gold



Question 8

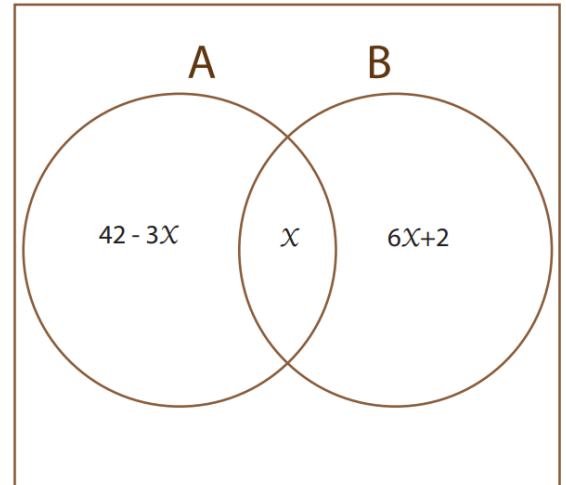
The Venn diagram shows sets A and B. There are 95 elements in the entire set.

If $n(A \cup B) = 76$, calculate;

(i) The value of x

(ii) Find $n(A' \cap B')$

(iii) Find $n(A' \cup B')$



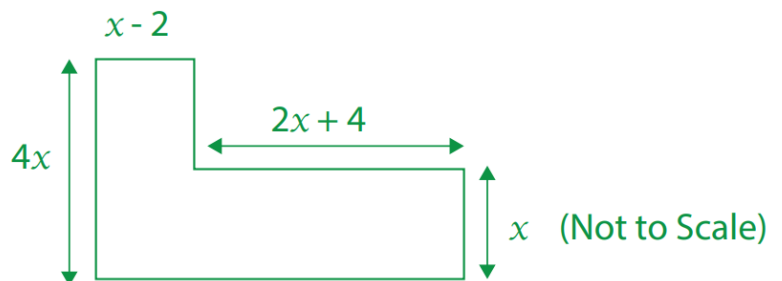
Gold



Question 9

The area of the shape is 40cm^2 .

a) Show that $3x^2 - 2x - 20 = 0$.



b) Solve $3x^2 - 2x - 20 = 0$.

Give your solutions correct to 3 significant figures.

c) Hence, work out the shortest side.

Gold



Calculator



Question 10

a) Factorise $5x^2 + 3xy - 2y^2$

b) $9 - (2x - 1)^2$

Platinum

