868

868TUTORS

TUTORS

Preparation for

High School

Mathematics

Sets

Math

Instructions and Tips:

- ✓ **You have 75 minutes to complete this worksheet**
- ✓ **This worksheet consists of 7 questions**
- ✓ **Write answers in the spaces provided**
- ✓ **All working must be clearly shown**

Student Name: _____
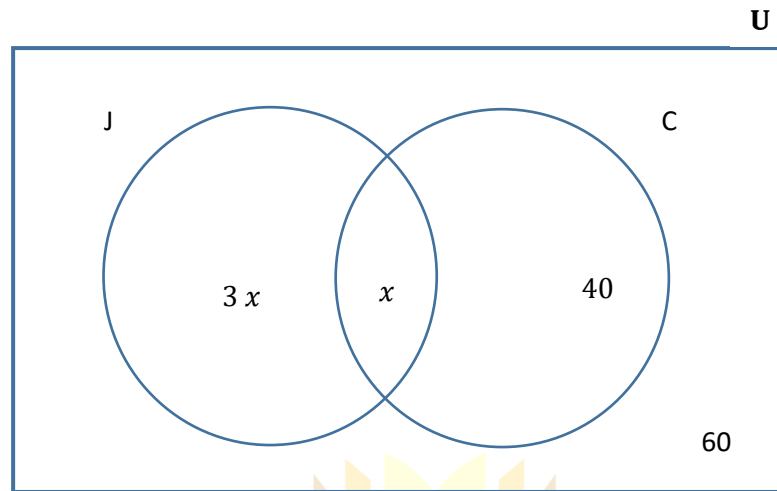
Student ID: _____

Date: _ _ / _ _ / _ _ _ _

Total Score:

Highest Score:

Tutor's Comments:

Question 1

The Venn diagram below illustrates the number of students who drink juice (J) or carbonated beverages (C) during lunch time in a school of 500 students.

(a) How many students drink neither Juice nor Carbonated beverages during lunch time?

(1 mark)

(b) Write an expression, in terms of x, which represents the TOTAL number of students in the school.

(1 mark)

Question 1

(c) Write an equation which may be used to determine the total number of students who drink both juice and carbonated beverages during lunch time.
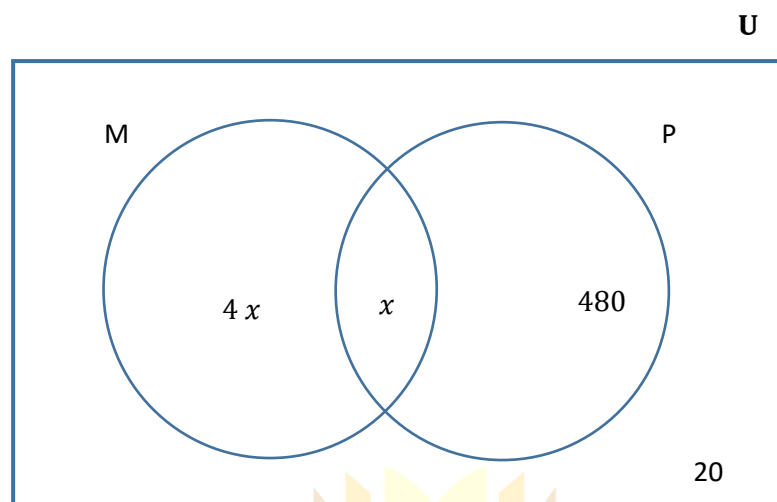
(1 mark)

(d) How many students drink juice?

(1 mark)

(e) How many students drink carbonated beverages only?

(1 mark)

Question 2

The Venn diagram below illustrates the number of people who make their own ice-cream (M) or purchase ice-cream (P) in a town of 1000 people.

U

M   P

$4x$ x 480

20

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(a) How many people in the town neither make their own ice-cream nor purchase ice-cream?

(1 mark)

(b) Write an expression, in terms of x, which represents the TOTAL number of people in the town.

(1 mark)

(c) Write an equation which may be used to determine the total number of people in the town who make their own ice-cream and purchase ice-cream.

(1 mark)

(d) How many people in the town make their own ice-cream?

(1 mark)

(e) How many people in the town purchase ice-cream only?

(1 mark)

Question 3

In a town of 50 households,

30 households own pickup trucks,

3y students own compact cars only

y households own both compact cars and pickup trucks

2 households own neither compact cars nor pickup trucks

(a) Draw and clearly label a Venn diagram to illustrate the aforementioned information.

(3 marks)

(b) Calculate the number of households that own compact cars.

(2 marks)

(c) Calculate the number of households that own pickup trucks only.

(2 marks)

Question 4

In a class of 35 students,

10 students have visited the Erin mud volcanoes

3z students have visited the La Brea Pitch Lake only

z students have visited both the Erin mud volcanoes and the La Brea Pitch Lake

1 person has visited neither the Erin Mud Volcanoes nor the La Brea Pitch Lake

(a) Draw and clearly label a Venn diagram to illustrate the aforementioned information.

(3 marks)

(b) Calculate the number of students that have visited the La Brea Pitch Lake.

(2 marks)

(c) Calculate the number of students that have visited the Erin mud volcanoes only.

(2 marks)

Question 5

The universal set, U is defined as:

U = {10,11,12,13,14,15,16,17,18,19,20}

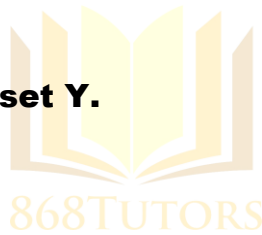**X and Y are subsets of U, such that:**

X = {even numbers}

Y = {odd numbers}

(a) List the members of the set X.

(1 mark)

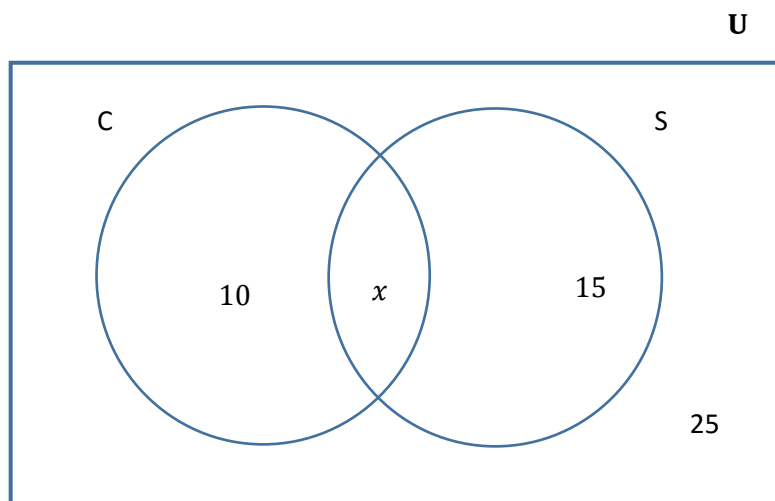**(b) List the members of the set Y.**

(1 mark)

(c) Draw a Venn diagram to represent the sets X,Y and U.

(3 marks)

Question 6

The Venn diagram below illustrates the number of people who drink coconut water (C) or spring water (S) in a village of 100 people.

U

C   S

10   x 15

25

(a) How many people in the village drink neither coconut water nor spring water?

(1 mark)

(b) Write an expression, in terms of x, which represents the total number of people in the village.

(1 mark)

(c) Write an equation which may be used to determine the total number of people in the village who drink coconut water and spring water.

(1 mark)

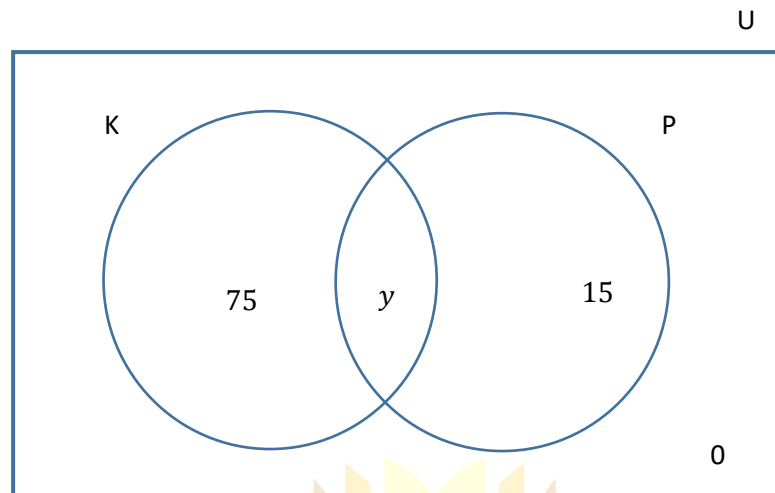(d) How many people in the village drink coconut water?

(1 mark)

(e) How many people in the village drink spring water only?

(1 mark)

Question 7

The Venn diagram below illustrates the number of people who plant vegetables (K) and those who purchase vegetables (P) in a community of 120 people.

U

K   P

75   y 15

0

(a) How many people in the community neither plant their own vegetables nor purchase vegetables?

(1 mark)

(b) Write an expression, in terms of y, which represents the total number of people in the village.

(1 mark)

(c) Write an equation which may be used to determine the total number of people in the village who plant vegetables and purchase vegetables.

(1 mark)

(d) Write an expression in y for the number of people who plant their own vegetables.

(1 mark)

(e) How many people in the village purchase vegetables only?

(1 mark)

END OF WORKSHEET