**STATION 1**

- (a) $15(a + b + c) = 'abc'$, where a , b and c are digits, so that $'abc'$ is a 3-digit number.

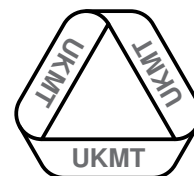
What is the value of $'abc'$? [2 marks]

- (b) $24(d + e + f) = 'def'$, where d , e and f are digits, so that $'def'$ is a 3-digit number.

What is the value of $'def'$? [2 marks]

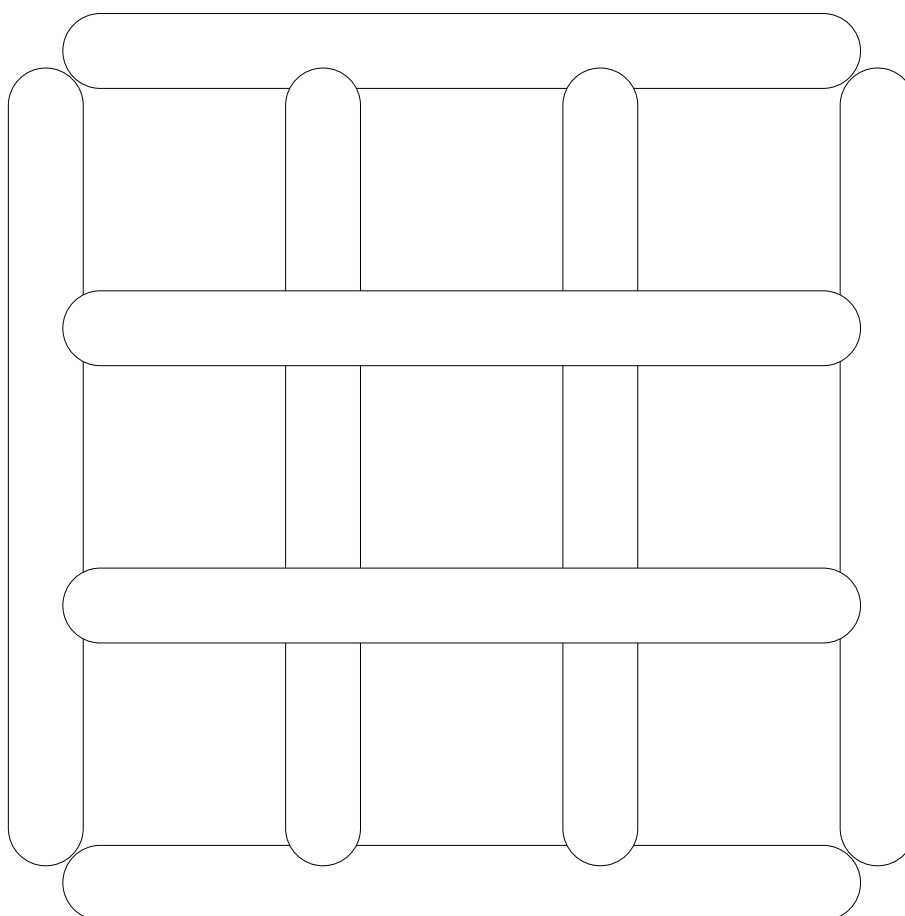
- (c) $11(g + h + i) = 'ghi'$, where g , h and i are digits, so that $'ghi'$ is a 3-digit number.

What is the value of $'ghi'$? [2 marks]



STATION 2

- (a) The grid below contains a total of 14 squares. The grid has been formed using eight sticks.

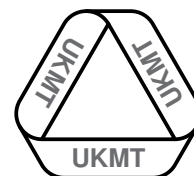


Remove two sticks to leave exactly three squares of different sizes. [3 marks]

- (b) Arrange nine sticks to form a figure which contains exactly six squares.

You are allowed to place one stick over another, but the edges of each square in your answer must be either a full stick or part of a stick.

[3 marks]

**STATION 3**

Garron and Zoey take turns shading some of the unshaded cells in the 2×4 grid below.

At each turn the unshaded cell, or cells, that they shade are in the shape of a square or a rectangle.

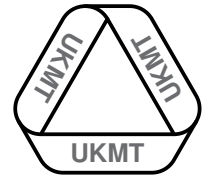
The person who has no cells left to shade *loses* the game.

Garron starts first and shades just cell A2, as shown.

	1	2	3	4
A				
B				

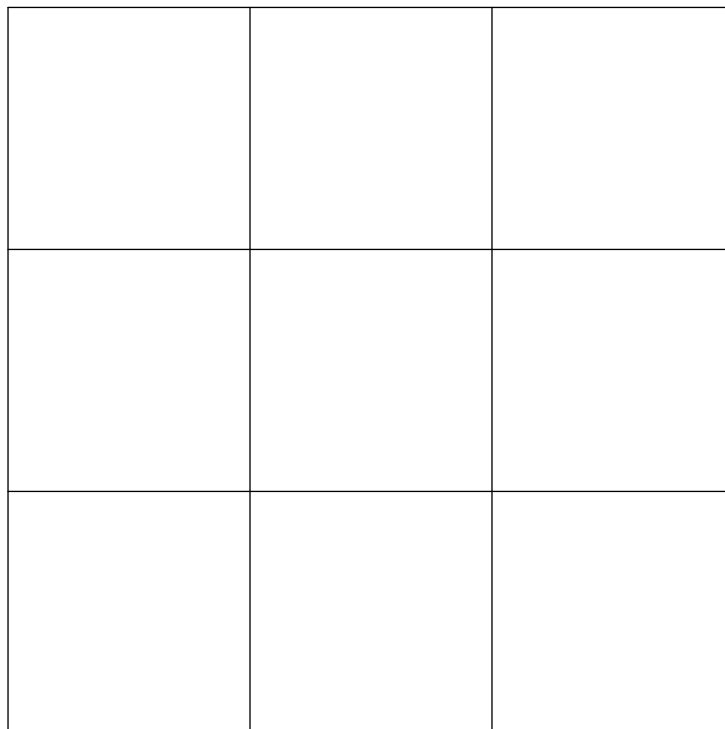
On Zoey's first turn, she also chooses to shade just one cell.

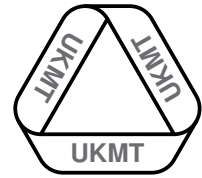
On the worksheet, mark a cross on the possible cells that Zoey could shade on her first turn in order to force a win.

**STATION 4**

You have three red, three yellow and three green cards to place on a grid. Place one card in each square on the grid below so that:

Each red card touches a yellow card edge to edge.
Each yellow card touches a green card edge to edge.
Each green card touches a red card edge to edge.
All nine cards are used.

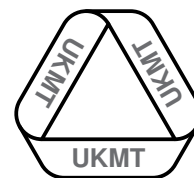




STATION 5

The number of positive factors of 30 is eight, namely 1, 2, 3, 5, 6, 10, 15 and 30.

- (a) How many positive factors does 210 have? [2 marks]
- (b) How many positive factors does 630 have? [2 marks]
- (c) How many positive factors does 510 510 have? [2 marks]

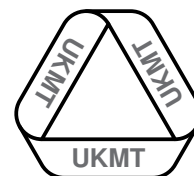


STATION 6

You are given an L-shape.

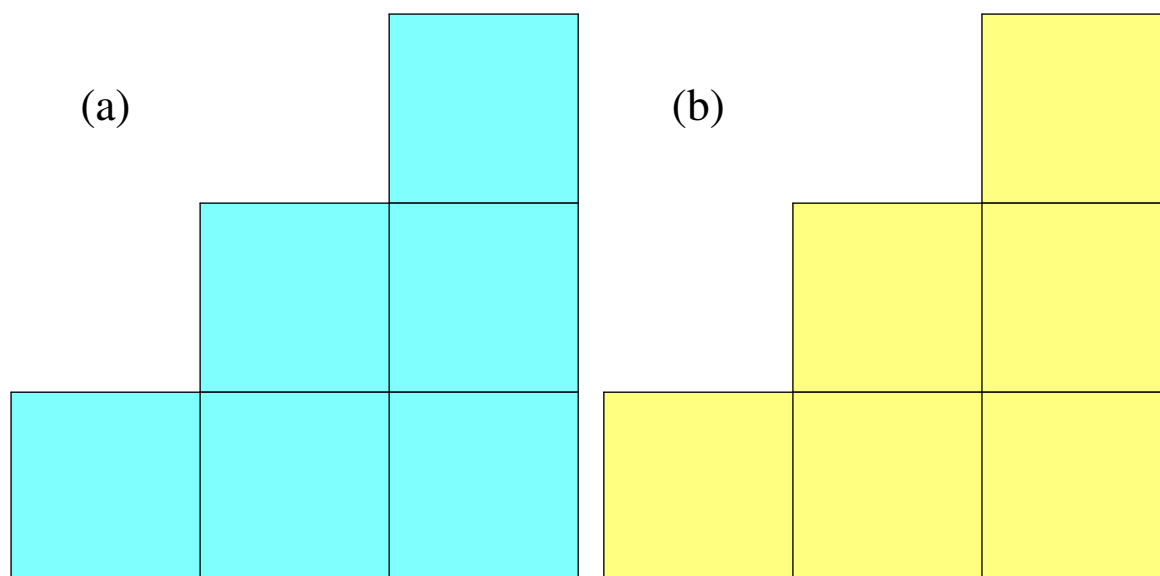
Divide the shape into eight congruent quadrilaterals.

You are expected to use a pencil and a ruler.



STATION 7

You are given two grids, each consisting of six cells.



Place the prime cards 2, 3, 5, 7, 11 and 13, of the appropriate colour, once each in a blank cell, so that:

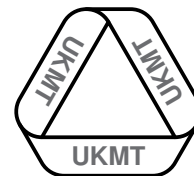
- (i) the total of the numbers in each of the three rows is equal to a prime less than 25; and
- (ii) the total of the numbers in each of the three columns is equal to a prime less than 25;

where

- (a) the number of different totals is *more* than four. [3 marks]

and

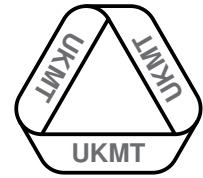
- (b) the number of different totals is *fewer* than four. [3 marks]



STATION 8

The 5×4 grid provided consists of congruent cells. You have been given 14 counters.

Place one counter in each of 14 of the cells of the grid, so that each row and each column contains an even number of counters.



STATION 1 WORKSHEET

(a)

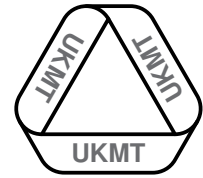
'abc':

(b)

'def':

(c)

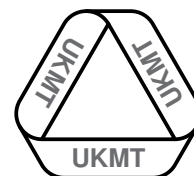
'ghi':



STATION 3 WORKSHEET

1 2 3 4

A				
B				



STATION 5 WORKSHEET

(a)

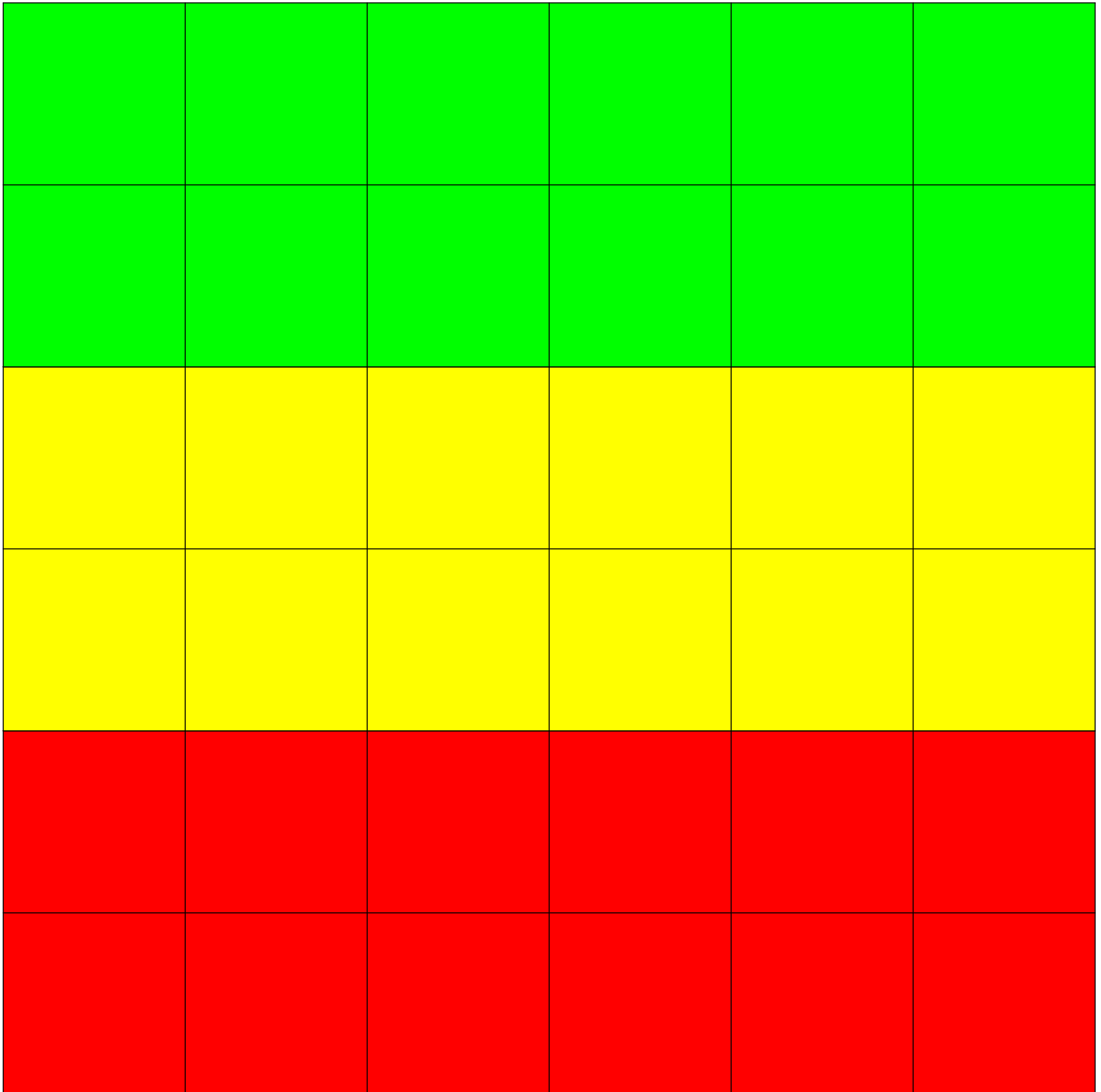
NUMBER:

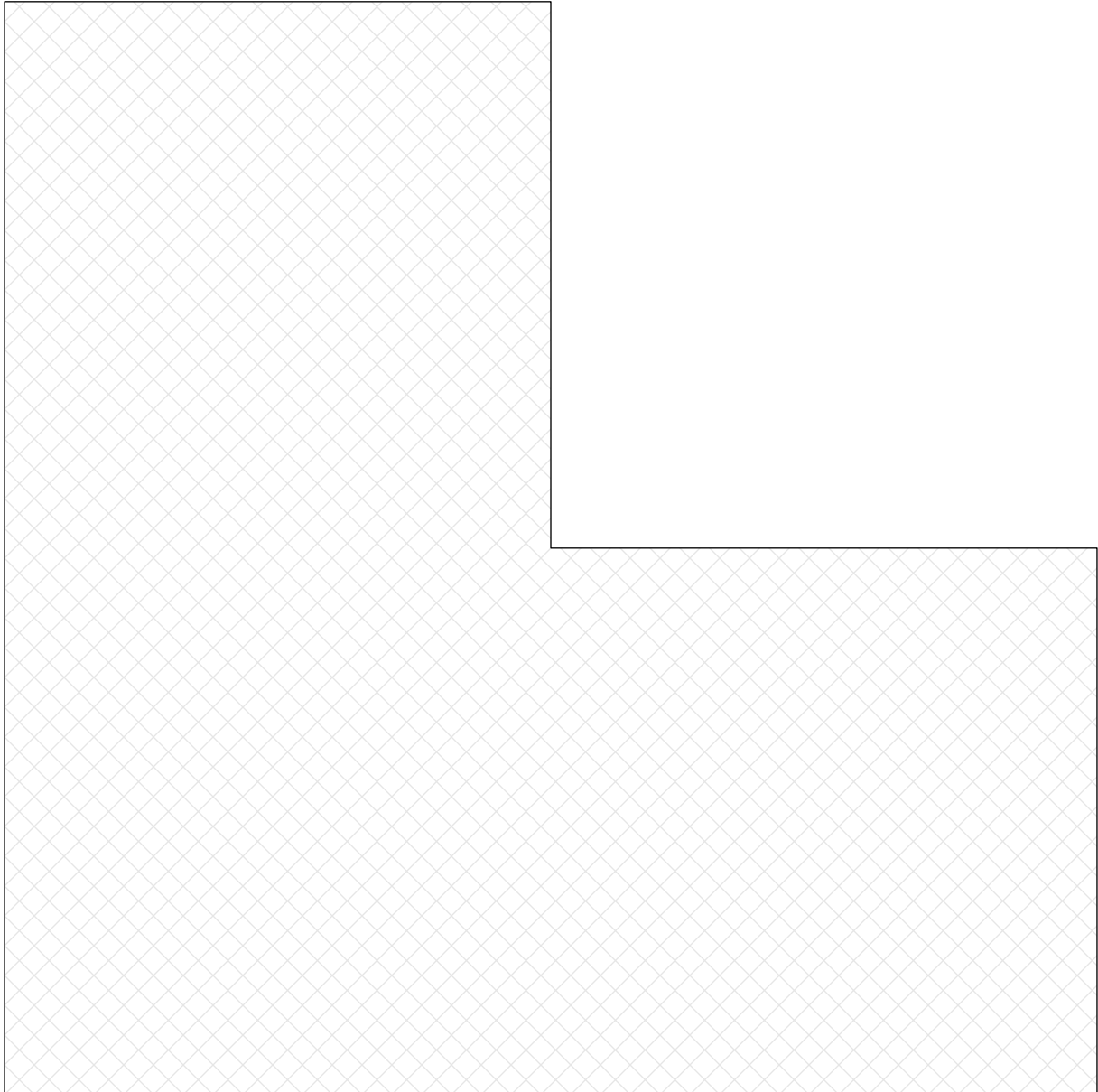
(b)

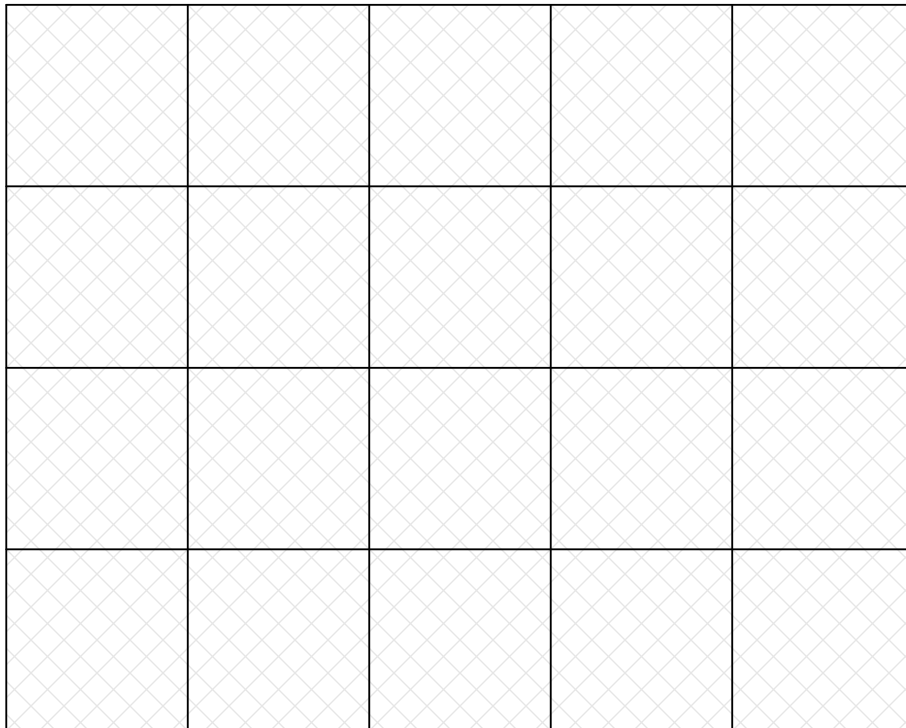
NUMBER:

(c)


NUMBER:







TEAM NUMBER 

SCHOOL NAME 

Station 1

Complete the worksheet and show it to the supervisor.

- (a) 0 2
- (b) 0 2
- (c) 0 2

Station 5

Complete the worksheet and show it to the supervisor.

- (a) 0 2
- (b) 0 2
- (c) 0 2

Station 2

Show your answer(s) to the supervisor.

- (a) 0 3
- (b) 0 3

Station 6

Show your answer(s) to the supervisor.

0 6

Station 3

Complete the worksheet and show it to the supervisor.

0 6

Station 7

Show your answer(s) to the supervisor.

- (a) 0 3
- (b) 0 3

Station 4

Show your answer(s) to the supervisor.

0 6

Station 8

Show your answer(s) to the supervisor.

0 6

Circle the mark awarded for each question and cross out the others.

FINAL SCORE /48

