

**Entrance test for
Westminster International University in Tashkent**

**Mathematics
APRIL 5 2017**

- **Time allowed: One hour ten minutes**
- **Answer all questions.**
- **It is advised that you work quickly and that you leave behind questions that are taking you too long to answer.**
- **You should only bring in: pens, pencils, erasers, rulers, protractors.**
- **No calculators are allowed. No correction fluid allowed.**
- **All your working must be presented. Answers with no evidence of calculations will not score any marks.**
- **Write your answers in the spaces below the questions. Workings and answers written on any other page will not be marked.**
- **Nothing should be removed from the exam room.**

Candidate Name:

All questions on this paper must be answered.

Write the answers in the space below each question.

Show **ALL** working for each question.

1. There are 2 800 students at Westminster High School.
The head teacher does a survey to see where they go to when they leave school

35% go to university

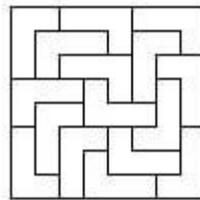
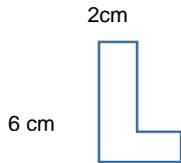
$\frac{4}{7}$ get a job

The rest go travelling.

How many students go to university? How many students get a job? How many students go travelling?

University.....
Get a job.....
Go travelling.....
(3 marks)

2. The tiled pattern below is made up of a number of L shaped tiles
Each tile is the same size



Calculate the perimeter of the pattern

.....cm
(5 marks)
Total for p1: 8 marks

3. London Animations and Windsor Games are two games companies.



The table shows some information about the sales of each company and the number of employees in each company in 2006 and 2016

	London Animations		Windsor Games	
	Sales (\$ millions)	Employees	Sales (\$ millions)	Employees
2006	480	2860	64	705
2016	588	3500	87	940

- a) Which company had the higher percentage increase in sales between 2006 and 2016?

.....

(4 marks)

- b) In which year did Windsor Games have its highest productivity (ie greatest sales per employee)?

You must show all your working

Year.....

(4 marks)

Total marks for p2: 8 marks

4. A brother and sister share out their collection of 5000 stamps in the ratio 5:3. The brother then shares his stamps with two friends in the ratio 3:1:1, keeping most for himself. How many stamps does he keep for himself?



.....
(4 marks)

5. If it takes 6 men 4 days to dig a hole 3 meters deep, how long will it take 10 men to dig a hole 7 meters deep?

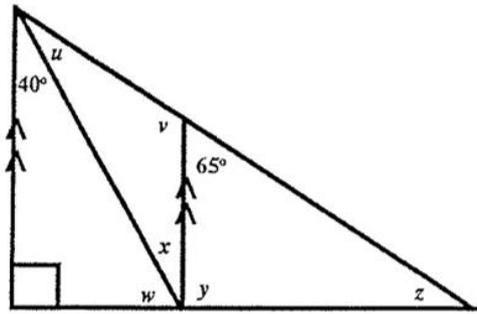
Round your answer to the nearest whole day



.....
(4 marks)

Total for p3:8 marks

6.



Calculate the size of the angles u, v, w, x, y, z

$u = \dots\dots\dots$

$v = \dots\dots\dots$

$w = \dots\dots\dots$

$x = \dots\dots\dots$

$y = \dots\dots\dots$

$z = \dots\dots\dots$

(6 marks)

7. Evaluate

a) $10\,000^{1/4}$

$\dots\dots\dots$

(1 mark)

b) $(5^0)^{1/2}$

$\dots\dots\dots$

(2 marks)

Total for page 4: 9 marks

8. The cost of 6 oranges and 5 apples is \$2.40.

The cost of 5 oranges and 6 apples cost \$2.55.

Find the cost of 3 apples and 3 oranges.



\$.....

(4 marks)

9.

a) Line AB has end points A (2.5,5.5) and B (8.5,7.5)

Find the mid-point of line AB

Midpoint

(2 marks)

b) Line CD has end point C (-4,8) and midpoint (0,8)

Find the co-ordinates of missing end point D

Endpoint

(2 marks)

Total for p5: 8 marks

10. The small wheel on a 'penny farthing' bicycle has a radius of 0.25m

The large wheel has a radius of 0.75m.

How many times does each wheel turn in 1 kilometre?

Use π as 3

(Give your answer to nearest whole numbers)



Small wheel.....

Large wheel.....

(6 marks)

11. Romo earns \$12 for his first hour of work, \$17 for his second hour, \$22 for his third hour and so on.

Write down the n th term of this sequence

.....

(3 marks)

Total for p6:9 marks

12. a) Factorise

$$3x^2 + 4x - 15$$

.....
(3 marks)

b) Simplify

$$\frac{1}{2x} - \frac{1}{3x} + \frac{1}{5x}$$

.....
(3 marks)

c) In this inequality y is an integer

Write all the possible values of y

$$-3 \leq 3y < 15$$

.....
(3 marks)

d) Make a the subject of the formula

$$\frac{T(M-a)}{E} = F$$

.....
(3 marks)

Total for p7:12 marks

13.a) Complete the table below for values between $-3 \leq x \leq 2$ for the equation

$$2x^2 + 3x - 9$$

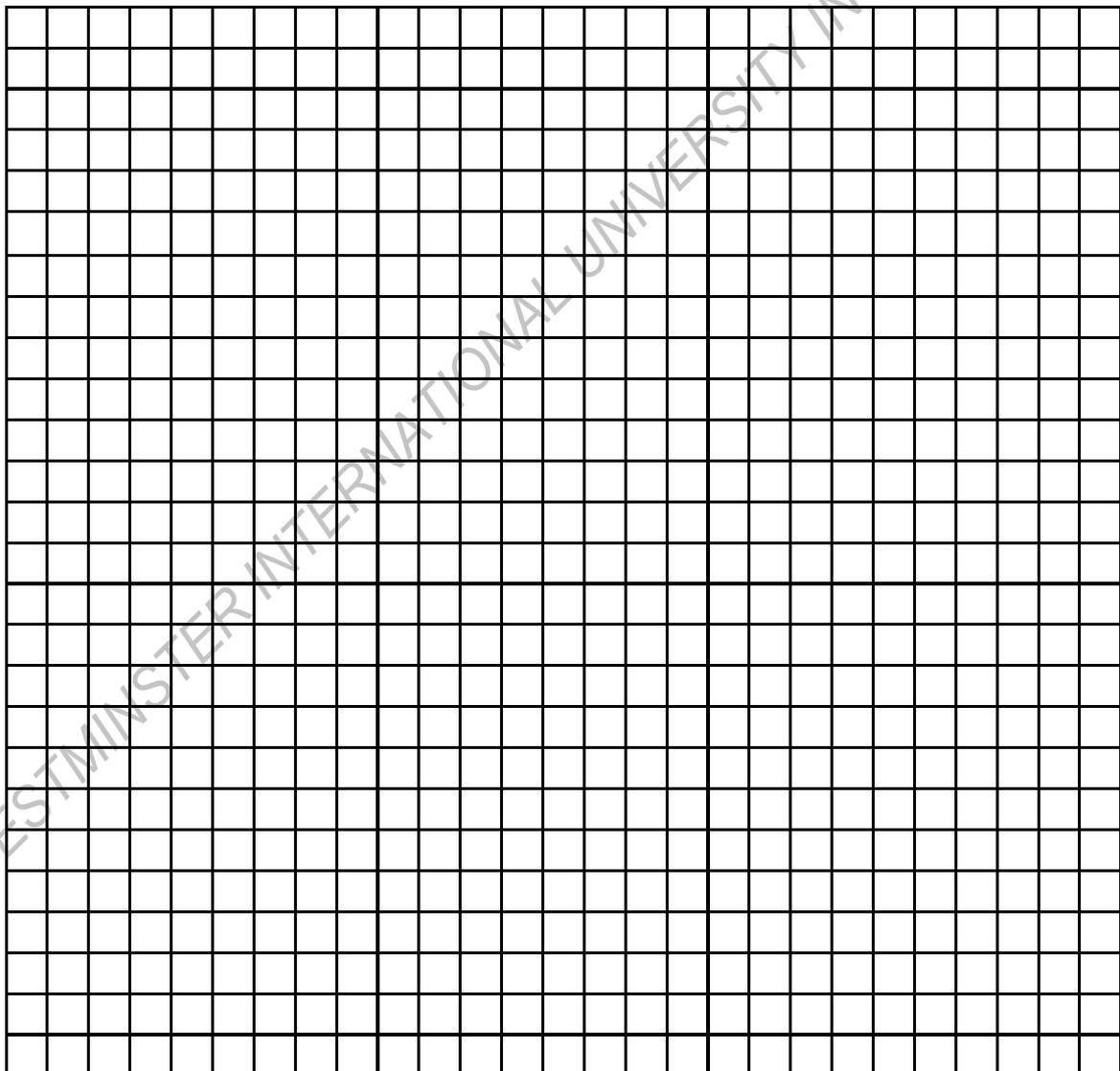
x	-3	-2	-1	0	1	2
y						

(4 marks)

b) Plot these values on to the grid below

(4 marks)

(You must include a scale on your axes)



Total for p8:8 marks

END OF TEST

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