UNIVERSITY OF WESTMINSTER

Entrance test for
Westminster International University in Tashkent

Mathematics
Test 1   2019

- **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.**

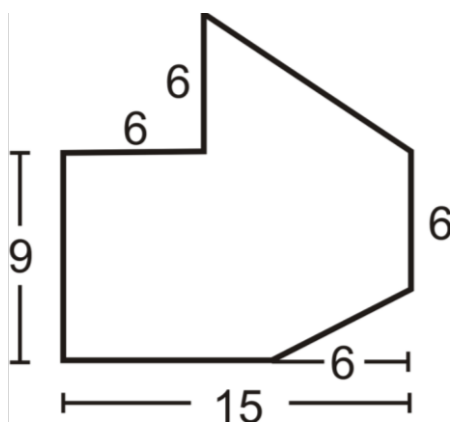- **Nothing should be removed from the exam room.**

Candidate Name: …………………………………………………………

All questions on this paper must be answered.

Write the answers in the space below each question.
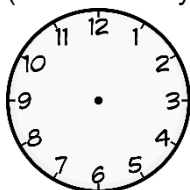
Show **ALL** working for each question.

1. Find the area of this shape. (All sides are in centimetres)

....

(4 marks)

2. Calculate the angle through which the minute hand of a clock rotates between noon (12.00 midday) and 12.26 pm.
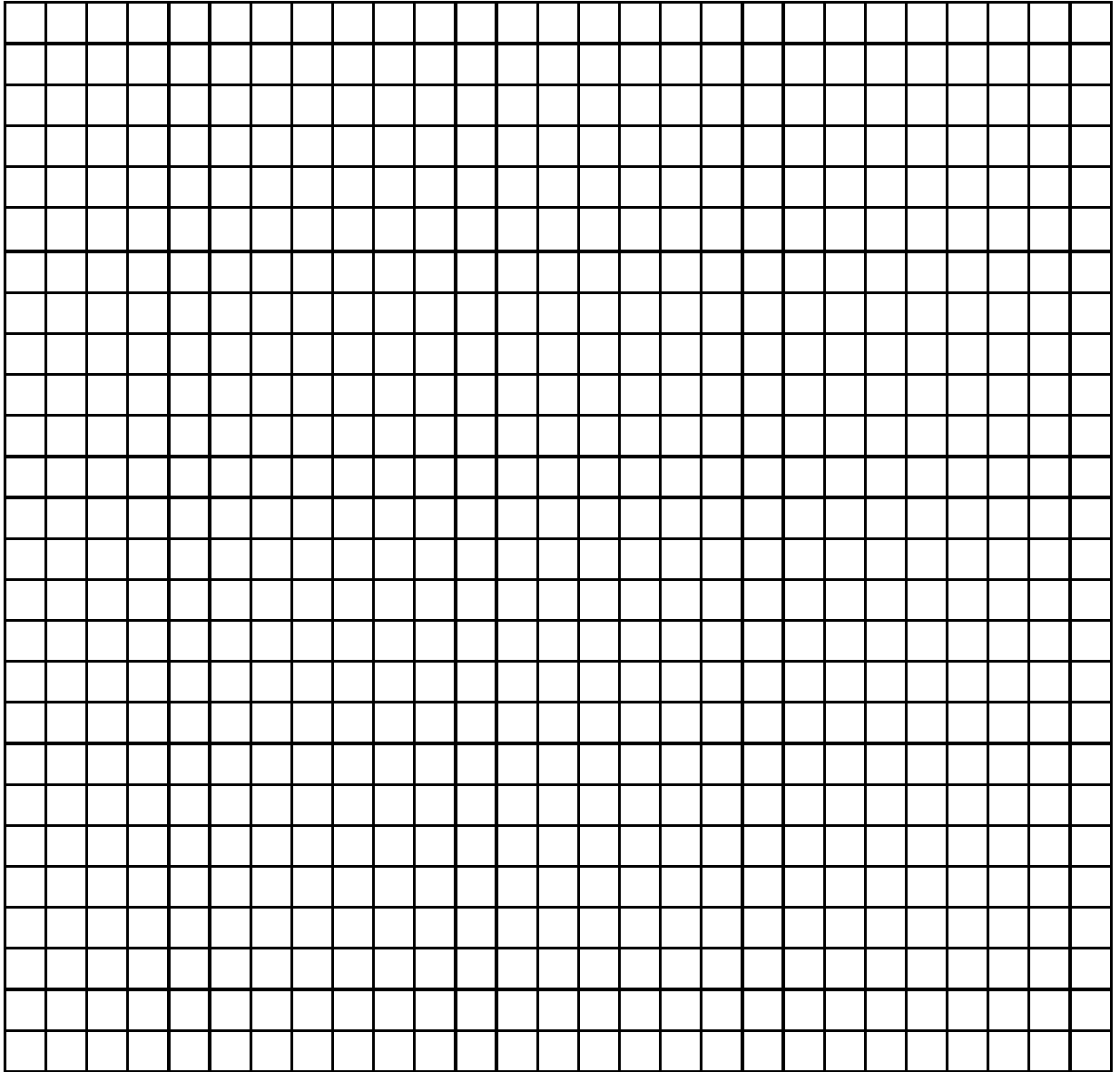

....

(4 marks)

Total marks for page: 8

3. Find the distance between the points (9,5) and (2,-19)

You may use the grid below to help you.

Distance……………………

4. Two similar solids have heights of 6 cm and 9 cm.

   If the volume of the smaller solid is 88 cm^3, calculate the volume of the larger solid.

   Volume……………………
   (4 marks)

5. Solve the equation $\dfrac{x-1}{3} - \dfrac{x-2}{4} = 1$

   …………………
   (3 marks)

   Total marks for page: 7

6. Make n the subject of the formula $\quad X = \dfrac{ny}{3-nt}$

…………………

(3 marks)

7. A train travels for 70 km.

It travels the first 38 km in 50 minutes and the remainder at an average speed of 40 km/hour.

Calculate the train's average speed for the whole journey to the nearest km/hour

………………km/hour

(4 marks)

Total marks for page: 7

8. Simplify

$$\frac{9x^2 - 4}{6x - 4}$$

…………………….

(3 marks)

9. Simplify

$$\frac{3}{\frac{1}{5}\left(\frac{1}{5} - \frac{1}{6}\right)}.$$

……………………..(3 marks)

10. Divide the following **decimal** numbers

$$\frac{6.3}{0.35} \text{ by } \frac{7}{17.5}$$

……………………..

(3 marks)

Total marks for page: 9

11. A plank of wood 15 m long, 10 cm wide and 8 cm thick weighs 480 kg.

What will be the weight of another plank of wood which is 20 m long, 10 cm wide and 4 cm thick?

………………………………………kg

(4 marks)

12. Given that $\dfrac{5a+4b}{a+3b} = \dfrac{3}{2}$ find the value of $\dfrac{a}{b}$

………………………

(3 marks)

Total marks for page: 7

13. Express, as a power of y, $y^a \times y^b \div y^{a-b}$

....

(3 marks)

14. $5,640 is divided between Anna, Boris and Catriona so that Anna receives $1,000 more than Boris and Boris receives $\frac{3}{4}$ the amount that Catriona receives.
Work out how much they each receive

Anna............................

Boris............................

Catriona............................

(3 marks)

Total marks for page: 6

15. On a desert island 1000 men can live for 30 days on the food they have.

   After 16 days 400 more men arrive.

   If they now eat *half* as much food as they did before, how long can they survive?
   Give your answer to the nearest day

   ……………………….
   (4 marks)

16. The first term of a sequence is -12 and the ninth term is 0.

   Find the *n*th term of this sequence.

   …………………….
   (4 marks)

   Total marks for page: 8

17. a) The price of a motorbike increases by 10% to $1980. Find the price before the increase.

……………….
(2 marks)

b) A new car falls in value by 35% in a year. After a year, it's worth $ 9 750. Find the price of the car when it was new.

…………………
(2 marks)

c) Abi bought a guitar for $500 and one year later she sold it for $375.
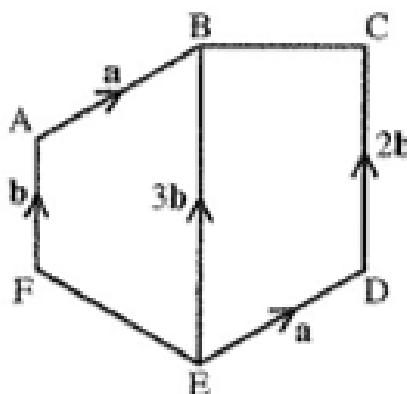
What percentage loss did Abi make?

………………..
(2 marks)

Total marks for page: 6

18. Write each vector in terms of **a, b** or **a** and **b.**

a) $\overrightarrow{FE}$

....
(2 marks)

b) $\overrightarrow{BC}$

....
(2 marks)

c) $\overrightarrow{FC}$

....
(2 marks)

Total marks for page: 6

END OF TEST