WESTMINSTER INTERNATIONAL UNIVERSITY IN TASHKENT
An Accredited Institution of the University of Westminster (UK)

UNIVERSITY OF WESTMINSTER

ONLINE MATHEMATICS ENTRANCE EXAMINATION

DATE: JULY 21, 2020

TIME: 16.00-17.30

1. You have 1 hour and 30 minutes for the exam.

2. You must answer all questions.

3. No calculators are allowed.

4. Type your answers in the spaces below the questions.

5. Answers with no evidence of calculations will not score any marks. Workings and answers written on any other page will not be considered.

6. You will need a computer connected to high speed Internet and stable electricity (You cannot take online math entrance exam on mobile phone).

Please note additional requirements:

7. Applicant will be automatically disqualified from the examination and will receive a score of 0 for the exam and exam administration fee payment will not be reimbursed:
   a) If he/she leaves the room during the examination.
   b) If he/she talks, whispers, or turns around.
   c) If he/she found to have any unauthorized materials during the examination
   d) If he/she caught cheating in the examination.
   e) If he /she fails to show contents of his/her pockets or any other containers to the invigilators.
   f) If he/she is found to have a mobile phone or other electronic device (switched on or off) on his/her room/table during the exam.

8. During the examination period, any technical problems including poor internet connection from applicant's side that may cause an applicant to leave the examination environment is under the applicant's responsibility.
9. Applicant *cannot* re-join the exam and continue the examination process. Once you leave the examination or you disconnect, you cannot continue the exam.
10. Invigilator may conduct room security checks at any point during your exam. You must perform all requested security checks. Loss of time during these security checks cannot be made up.
11. Please follow detailed exam instruction sent to applicant's personal account via admission system.
12. Applicant has to follow the instruction strictly during the examination.

Applicant ID: _____

All questions on this paper must be answered.

Write the answers in the space below each question.

Working must be shown for all stages of the questions.

1. Solve the following simultaneous equations

$$2y = 4x - 18$$
$$2x = 15 + 3y$$

(4 marks)

2. Factorise

$$12x^2 + 5x - 3$$

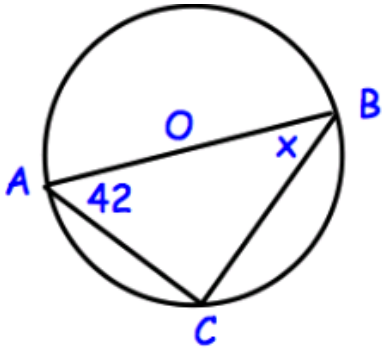
(3 marks)

3.

a) Calculate the distance between the points (-10, 2) and (35,17).

(3 marks)

b) Find the size of angle ***x***



(2 marks)

4.

a) Simplify

$$\frac{\sqrt{y+1}}{\sqrt{y+1}-\sqrt{y}} - \frac{\sqrt{y}}{\sqrt{y+1}+\sqrt{y}}$$

(3 marks)

b) Solve for x

$$\frac{21-2x}{3} = 5$$

(2 marks)

c) Write 0.5(6) as a fraction in its simplest form?

(2 marks)

5.

a) W is directly proportional to A squared. When W=50, A=5.

Write an equation linking W and A.

(2 marks)

b) Work out the value of W when A = 3

(2 marks)

6.

Liam, Sarah and Emily shared some money in the ratio 2 : 3 : 8.

Emily got $105 more than Liam. How much money did Liam, Sarah and Emily each get?

(4 marks)

7.

a) In a sale prices are reduced by 22%. The sale price of a fridge is $507

What is the usual price of the fridge?

(3 marks)

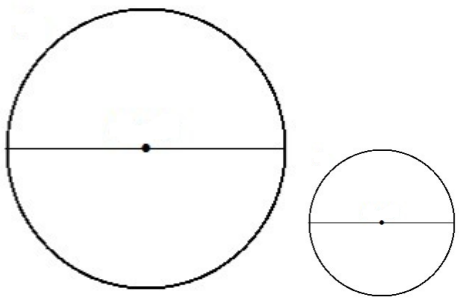
b) Make y the subject

$$4(x - y) = 2y + 5$$

(2 marks)

8.

The areas of two circles are in the ratio of 1:9 and the radius of the smaller circle is 2.5 cm. Find the area of the larger circle?



Give answer to nearest whole number.

(4 marks)

9.

A car travels 200 km to the nearest 10 km. It travels for 4 hours to the nearest hour.

Calculate the greatest possible average speed. *Give your answer to the nearest km/h*

(5 marks)

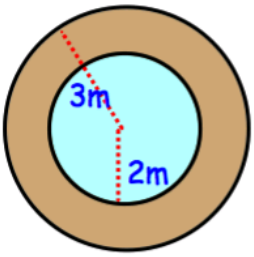
10.

Mr Martin has a circular garden of grass with a circular path around it.

From the centre of the grass to the inside of the path is 2 m.

From the centre of the grass to the outside of the path is 3 m.

What is the area of the path? Use 3.14 as the value of π



(4 marks)

11.

a) A mountain is losing 5% of its snow each year.

What percentage of its original snow will be left after 5 years?

Give your answer to 2 d.p.

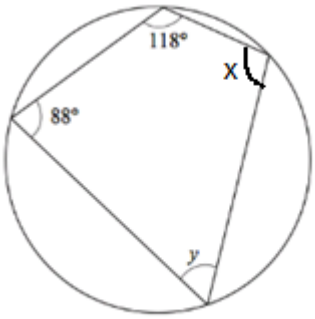
(4 marks)

b) Show that $\dfrac{1}{1+\dfrac{1}{\sqrt{2}}}$ can be written as $2-\sqrt{2}$

(3 marks)

12.

Find the sizes of the angles *x* and *y* in the diagram below.



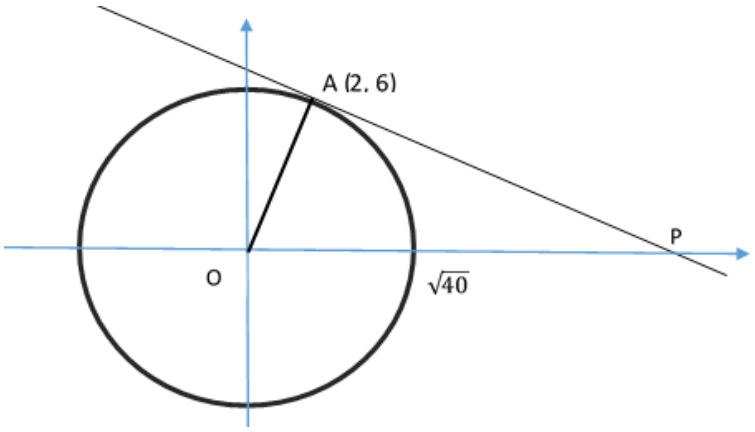
(2 marks)

13.

The line *l* is a tangent to the circle $x^2 + y^2 = 40$ at the point *A*.

A is the point (2, 6). The line *l* crosses the *x*-axis at the point *P*.

Work out the area of triangle *OAP*.



(6 marks)

14.

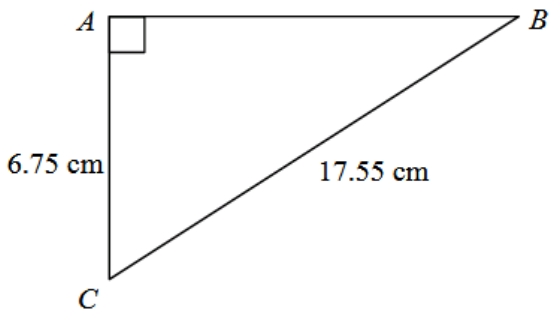
A meteor travels for 2×10^3 seconds at a speed of 5×10^5 meters per second.

How far does the meteor travel in kilometers?

(4 marks)

15.

Calculate the length of *AB.* Give your answer to the nearest cm



(3 marks)

16.

There are 60 people in a choir. Half of the people in the choir are women.

The number of women in the choir is 3 times the number of men in the choir.

The rest of people are children.

$$\frac{the\ number\ of\ children}{the\ number\ of\ men} = \frac{n}{1}$$

Work out the value of n. You must show how you get your answer.

(3 marks)

End of test