19/03/2021   5H   TEST 2

Calculate the EXACT value of

$$\frac{3\frac{1}{5} - \frac{2}{3}}{2\frac{4}{5}}$$

Answer = _____

Solve for x:

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

X =

Solve the simultaneous equations:

$3x - 2y = 10$
$2x + 5y = 13$

X =

Y =

The points A, B and C have position vectors $\overrightarrow{OA} = \begin{pmatrix} 6 \\ 2 \end{pmatrix}$, $\overrightarrow{OB} = \begin{pmatrix} 3 \\ 4 \end{pmatrix}$ and $\overrightarrow{OC} = \begin{pmatrix} 12 \\ -2 \end{pmatrix}$ respectively.

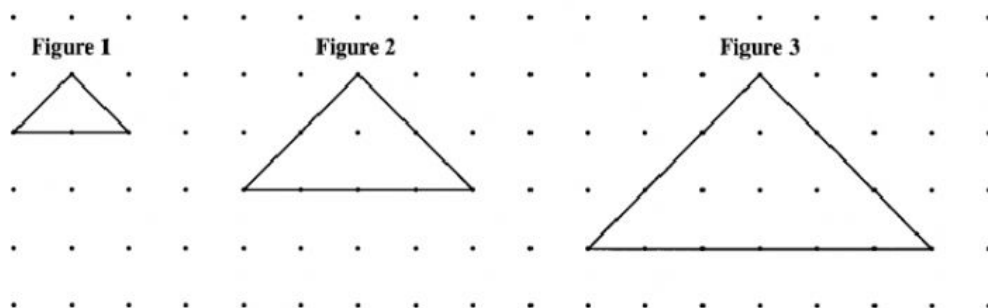(i)   Express in the form $\begin{pmatrix} x \\ y \end{pmatrix}$ the vector

   a) $\overrightarrow{BA} = (\ )$ (2 marks)

   b) $\overrightarrow{BC}. = (\ )$ (2 marks)

The diagram below shows the first three figures in a sequence of figures. Each figure is an isosceles triangle made of a rubber band stretched around pins on a geo-board. The pins are arranged in rows and columns, one unit apart.

Figure 1   **Figure 2**   **Figure 3**

Study the patterns in the table below, and on your answer sheet, complete the rows numbered (i), (ii), (iii) and (iv). The breaks in the columns are to indicate that the rows do not follow one after the other.

	Figure	Area of Triangle	No. of Pins on Base
	1	1	2 × 1 + 1 = 3
	2	4	2 × 2 + 1 = 5
	3	9	2 × 3 + 1 = 7
(i)	4	_____	_____
(ii)	_____	100	_____
(iii)	20	_____	_____
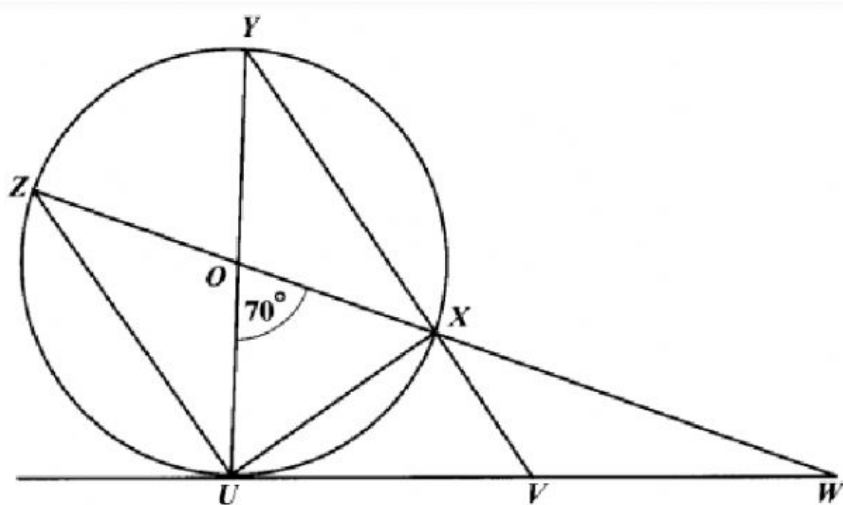
Calculate, showing working where necessary, the measure of angle

a) OUZ =   degrees

b) UVY =   degrees

c) UWO =   degrees