Lakshmi Girls' Hindu College
End of Term Examinations – Term III – 2021

Section 1

Answer ALL questions by typing in the numerical values only into the text boxes provided.

Question 1

Calculate the EXACT value of

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

Answer =	_____

Question 2

Solve for x:

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

X =

Question 3

Solve the simultaneous equations:

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

X =
Y =

Question 4
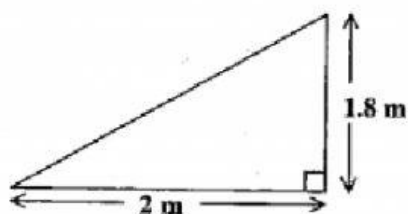
The histogram below shows the distribution of heights of seedlings in a sample.
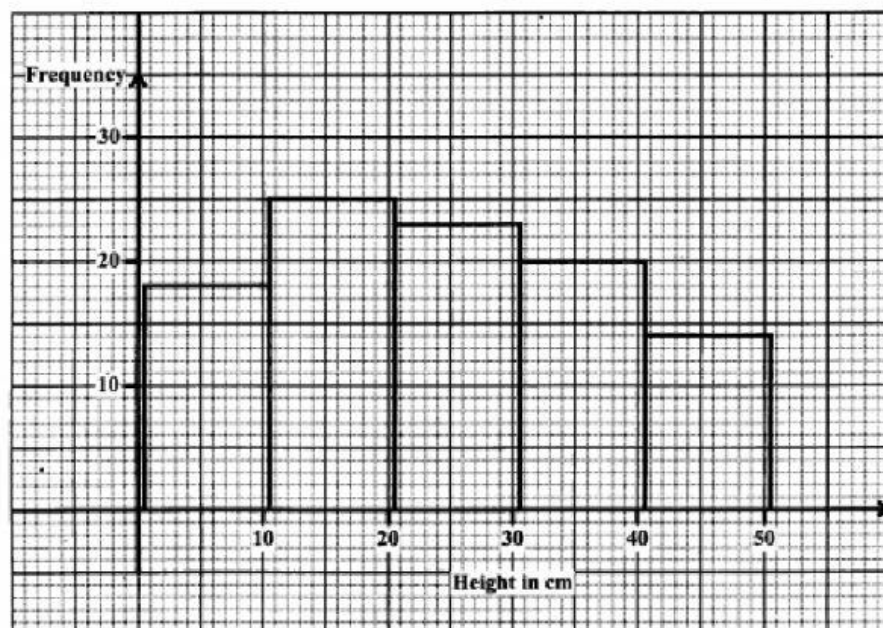
(a) Copy and complete the frequency table for the data in the sample.

Height in cm	Mid-point	Frequency
1 - 10	5.5	18
11 - 20	15.5	25
21 - 30		
31 - 40		
41 - 50		

Question 5

A vertical stick of height 1.8 m casts a shadow of length 2 m on the horizontal as shown in the diagram below, **not drawn to scale.**

Calculate, to the NEAREST degree, the angle of elevation of the sun.   **(4 marks)**

Angle of elevation =   degrees

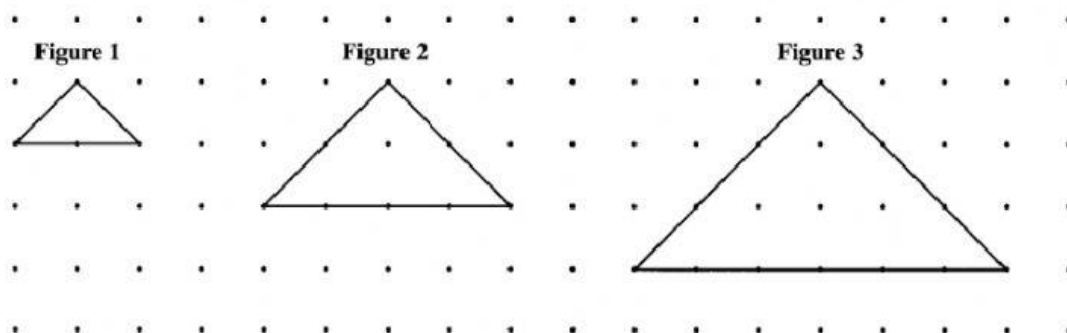## Question 6

The functions f and g are defined by

$$f(x) = \frac{1}{2}x + 5, \qquad g(x) = x^2.$$

Evaluate

(i) $g(3) + g(-3)$ =

(ii) $f^{-1}(6)$

   =

(iii) $fg(2)$

          =

Question 7

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.

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	$2 \times 1 + 1 = 3$	
	2	4	$2 \times 2 + 1 = 5$	
	3	9	$2 \times 3 + 1 = 7$	
(i)	4	_____	x + =	(2 marks)
(ii)	_____	100	x + =	(2 marks)
(iii)	20	_____	x + =	(2 marks)

Question 8
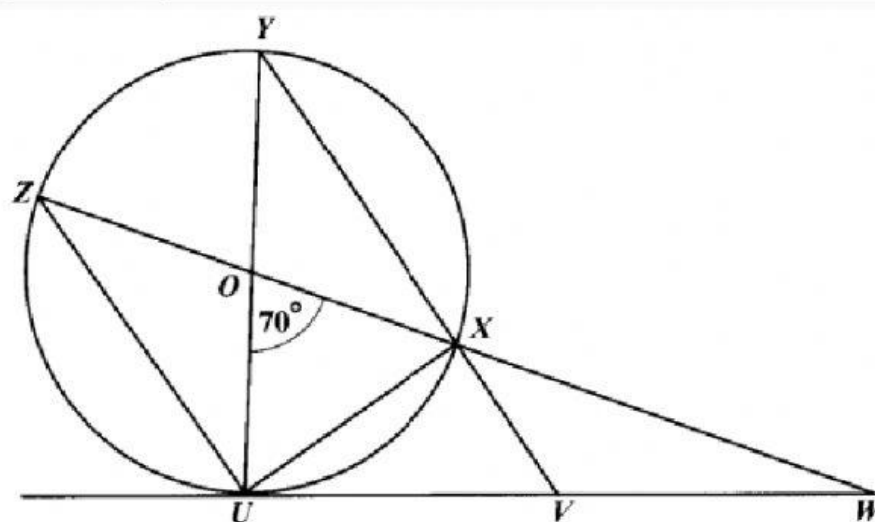
Calculate, showing working where necessary, the measure of angle

a) OUZ =   degrees
b) UVY =   degrees
c) UWO =   degrees