This is a Class 1 exam

Lebanon Evangelical School for Boys and Girls

Lighting the fires that burn for eternity

Loueizeh - Baabda

Lebanon Evangelical School

for Boys and Girls — Loueizeh - Baabda

Stage Exam 06

20JUN, 21JUN2022

Do NOT write in this box. Your MARK will be placed here.

Subject :	Maths
Class :	6A
Teacher :	Miss Lydia Goodwin
Duration :	1 hour

Show ALL your work. Calculators are NOT allowed. Answer on squared/grid paper.

Your name :		*Time taken to complete exam*
Your Class :		
Exam Room :		
How many sheets, including cover sheet :		

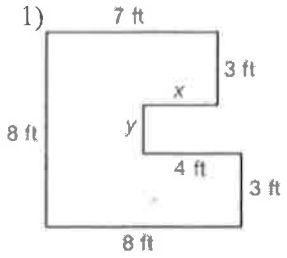
- Do not open this paper until the teacher in charge instructs you to do so.
- The most important thing to remember in taking an exam is NEVER PANIC.
- If you are caught cheating in this exam, you will be awarded zero for ALL exams that are taken on this day.

Write all your solutions neatly on a separate paper unless stated otherwise.

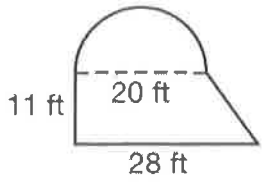
Show all of your work. **Calculators** are **not allowed.**

A) Find the area of the following figures [8 marks]

1) 1)



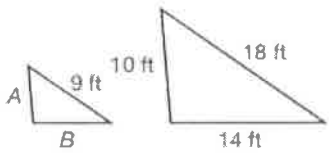
2)



B)

Find the missing side lengths [2 marks]

1)



A =

B =

C) Fill in the following table. [6 marks]

	Percent	**Fraction**	**Decimal**
1)	55%		
2)		$\frac{4}{5}$	
3)			0.03

D) Simplify [2 marks]

1) 55% of 55 =

2) 84% of 75 =

E) Solve [3 marks]

1) How many square meters of sod are needed to cover a triangular section of lawn with a base of 12 meters and a height of 8 meters?
2) During the butterfly stroke competitions at the 1972 Summer Olympic Games, Mayumi Aoki swam 100 meters in 64 seconds, and Karen Moe swam 200 meters in 136 seconds. Do these rates form a proportion?
3) Mark has 6 rock music cassette tapes, which make up 60% of his total collection. How many tapes does he have in his collection?

F) 1) Draw two adjacent supplementary angles $X\hat{O}Y$ and $Y\hat{O}Z$ [4 marks]
such that $X\hat{O}Y = 40^{o}$.

2) Calculate $Y\hat{O}Z$.

3) Draw the bisector [OU) and [OV) of the angles $X\hat{O}Y$ and $Y\hat{O}Z$ respectively by using the compass (keep the arcs).

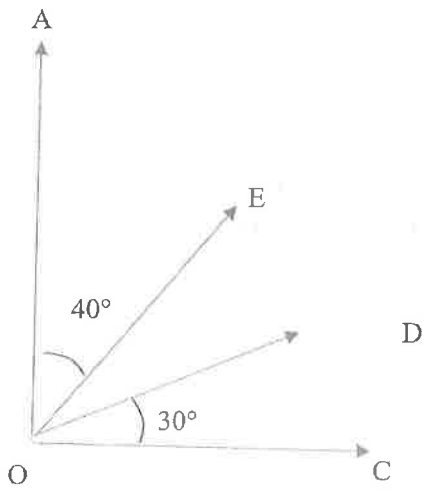
4) Calculate $U\hat{O}V$.

G) Observe the adjacent figure, in which $A\hat{O}C$ is a right angle, and answer the following. [5 marks]

1) Are $A\hat{O}E$ and $A\hat{O}C$ adjacent? Why?

2) Are $E\hat{O}D$ and $D\hat{O}C$ adjacent? Why?

3) Calculate $E\hat{O}D$.



A. 1) $A_1 = 7ft \times 3ft = 21ft^2$ (1)

$A_2 = (8ft - 3ft - 3ft) \times (8ft - 4ft)$

$= 2ft \times 4ft$

$= 8ft^2$ (1)

$A_3 = 8ft \times 3ft$

$= 24ft^2$ (1)

$A_{TOTAL} = 21ft^2 + 8ft^2 + 24ft^2$

$= 29ft^2 + 24ft^2$

$= \cancel{73ft^2}$ (1) $53ft^2$

2) $A_{CIRCLE} = \pi R^2$

$= 3.14 (20ft \div 2)^2$

$= 3.14 (10ft)^2$

$= 3.14 (100ft^2)$

$= 314ft^2$

NOTE: A_1 is only half the circle.

Half circle:

$A_1 = 314ft^2 \div 2$

$= 157ft^2$ (1)

$$\begin{array}{r|l} & 157 \\ \hline 2 & 314 \\ -2\downarrow & \\ \hline 11 & \\ -10\downarrow & \\ \hline 14 & \end{array}$$

Rectangle:

$A_2 = 11ft \times 20ft$

$= 220ft^2$ (1)

Triangle:

$A_3 = (11ft \times 8ft) \div 2$

$= 88ft^2 \div 2$

$= 44ft^2$ (1)

$A_{TOTAL} = 157\,ft^2 + 220\,ft^2 + 44\,ft^2$

$= \boxed{421\,ft^2}$ (1)

B. i) $\frac{9ft}{18ft} = \frac{A}{10ft}$

$9ft \times 10ft = A \times 18ft$

$\frac{90\,ft^2}{18ft} = \frac{A \times 18ft}{18ft}$

$\boxed{5ft = A}$ (1)

$\frac{9ft}{18ft} = \frac{B}{14ft}$

$9ft \times 14ft = B \times 18ft$

$\frac{126\,ft^2}{18ft} = \frac{B \times 18ft}{18ft}$

$\boxed{7ft = B}$ (1)

C. 1. $55\% = \frac{55 \div 5}{100 \div 5} = \boxed{\frac{11}{20}} = \boxed{0.55}$ (1) (1)

2. $\boxed{80\%} = \frac{80}{100} = \frac{20 \times 4}{20 \times 5} = \boxed{0.8}$ (1) (1)

3. $\boxed{3\%} = \boxed{\frac{3}{100}} = 0.03$ (1) (1)

D. 1) 55% of 55 (1)

$$\frac{55}{100} = \frac{m}{55}$$

$55 \times 55 = 100 \times m$

$\frac{3,025}{100} = \frac{100 \times m}{100}$

$\boxed{30.25 = m}$

2) 84% of 75

$$\frac{84}{100} = \frac{m}{75}$$

$84 \times 75 = 100 \times m$

$\frac{6,300}{100} = \frac{100 \times m}{100}$ (1)

$\boxed{63 = m}$

E. 1) Area of a triangle $= (b \times h) \div 2$

$= (12m \times 8m) \div 2$

$= 96m^2 \div 2$

$= 48m^2$

48 square meters of sod are needed to cover the lawn. (1)

2) Mayumi Aoki: $\frac{100m}{64s}$

Karen Moe: $\frac{200m}{136s}$

$\frac{100m}{64s} \stackrel{?}{=} \frac{200m}{136s}$

$100m \times 136s \stackrel{?}{=} 64s \times 200m$

$13600ms \neq 12800ms$

The cross product of the two rates is not equal, therefore the rates do not form a proportion. (1)

3) $\frac{6}{m} = \frac{60}{100}$

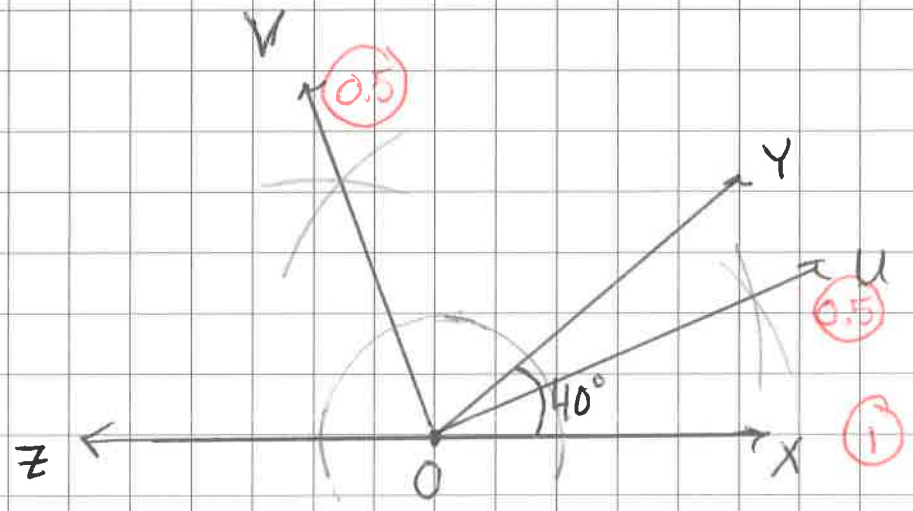
$6 \times 100 = m \times 60$

$\frac{600}{60} = \frac{m \times 60}{60}$

$10 = m$

Mark has 10 rock music cassette tapes in his collection. (1)

F 1)



2) $X\hat{O}Y + Y\hat{O}Z = 180°$

$40° + Y\hat{O}Z = 180°$

$-40° \qquad -40°$

$\boxed{Y\hat{O}Z = 140°}$ (1)

3) See figure from part 1.

4) $U\hat{O}V = U\hat{O}Y + Y\hat{O}V$

$U\hat{O}V = 20° + 70°$

$\boxed{U\hat{O}V = 90°}$ (1)

$U\hat{O}Y = X\hat{O}Y \div 2$

$U\hat{O}Y = 40° \div 2$

$U\hat{O}Y = 20°$

$Y\hat{O}V = Y\hat{O}Z \div 2$

$Y\hat{O}V = 140° \div 2$

$Y\hat{O}V = 70°$

G. 1) Criteria for adjacency:

(a) share a vertex ✓
vertex O

(b) have a common ray ✓
ray [OA)

(c) fall to either side of the common ray ✗
not met

$\boxed{A\hat{O}E \text{ and } A\hat{O}C \text{ are not adjacent because they do not fall on either side of the shared side.}}$ (2)

2) Criteria for adjacency:
(a) share a vertex ✓
vertex O
(b) have a common ray ✓
ray [OD)
(c) fall to either side of the common ray ✓
yes

(2)

$E\hat{O}D$ and $D\hat{O}C$ are adjacent because they share a vertex, have a common ray, and fall to either side of the common ray.

3) $E\hat{O}D + A\hat{O}E + D\hat{O}C = 90°$ because $A\hat{O}C = 90°$

$E\hat{O}D + 40° + 30° = 90°$

$E\hat{O}D + 70° = 90°$

(1)

$E\hat{O}D = 20°$