MATHEMATICS
FORM 2
MID TERM 1 EXAM, 2023

1. Use tables to evaluate. (3mks)

$$\sqrt{\left(\frac{3.45 \times 16.7}{31.5}\right)}$$

NUMBER	STD FORM	LOG
3.45	**3.45×01^{O}**	**0.5378**
16.7	**1.67×10^{1}**	**1.22227^{-1}**
		1.7605
31.5	**3.15 x 101**	**1.4983-**
		0.2622 x1/2
1.3524	**1.35×10^{o}**	**0.1311**
=1.3526		

2. Solve for x in each of the following equations. (3mks)

(a) $3^{(2x-5)} = 27$

$3^{(2x-5)} = 3^3$
2x-5=3
2x=8
2 2
X=4

(b) $3^{4x} \div 3^{-7} = 3^{15}$ (3mks)

$3^{4x--7} = 3^{15}$
$3^{4x+7} = 3^{15}$
4x+7=15
4x=15-7
4x=8
4 4
X=2

3. Use reciprocals tables to evaluate (3mks)

$$\frac{7}{0.0125} + \frac{1}{12.5}$$

$\left(1/0.0125\right) + 1/12.5$

560x7 + 0.08
3920+0.08
3920.08

4. A metallic cuboid measuring 16cm by 8cm by 4 cm was melted . The material was then used to make a cube. What was the length of the cube? (3mks)

16x8x4=512cm^3
3√ 5/2=8cm

5. Simplify

$$\sqrt[3]{\frac{27x^3y^9}{X^6y^3}}$$ (3mks

$\frac{3xy^3}{X^2y}$

$\frac{3y^2}{X}$
$\frac{3y^2}{X}$
Or $3y^2x^{-1}$

6. Find the equation of the line through the points A (2, 5) and B(3, 11) (3mks)

M=$\frac{11-5}{3-2}$=$\frac{6}{1}$
=6
$\frac{Y}{X}$=$\frac{6}{}$
A (2,5 c(x,7)
y/x=$\frac{y-5}{x-2}$=6
y-5=6(x-2)
y-5=6x-12
y=6x-7
y=6x-7

7. Determine the equation of the line perpendicular to the line whose equation is y=-5x+3 and passes through the point (3, 2). (3mks)

y-5x+3
m1=-5
$m_1xm_2=-1$
$-5/-5m_2=1/5$
$M_2=1/5$

y-2=1
x-3=5
5(y-2)=x-3
5y-10=x-3
5y=x-3+10
5y=x+7
Y=1/5x+7

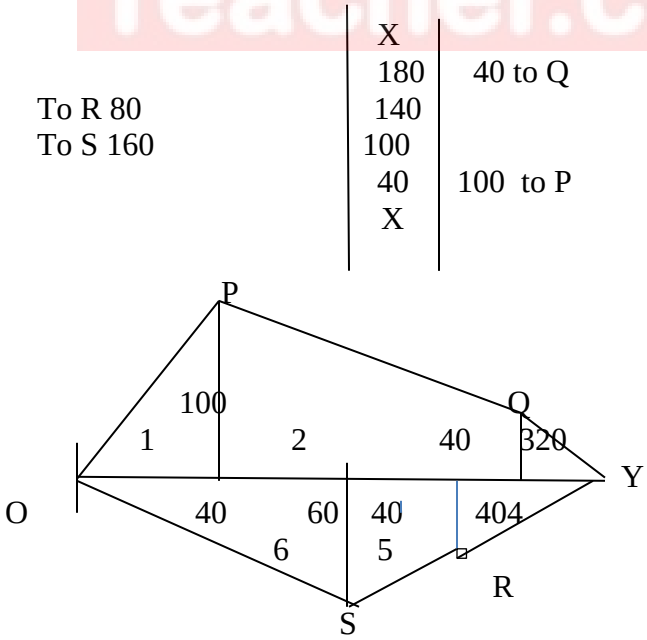
8. A(-5, -2), B(-2, -5) and C(-12, -2) are vertices of a triangle. Find the image of the triangle when it is reflected in :
   (a) The line y=-x (4mks)

A i(4,2.5)
B' (10,1)
C '(4,6)

   (b) The line y= x (4mks)

A "(-4, -2.5)
B "(-12, -2)
C "(-2, -5)

9. Find the area in hecatares of a coffee filed whose measurements are entered in a filed book as shown below. Take xy=200m as the baseline. (8mks)



Area 1= ½ x 40 x 100=2000m^2
Area 2= ½ (100+40)140=9000m^2

Area 3=1/2 x 20x40=$\underline{400m^2}$
$12200m^2$
Area 4=1/2 * 60x80=$2400m^2$
area = ½(160 + 80
0 40=$4800m^2$
Area

10. Use the reciprocal tables and square root to evaluate. (4mks)

$$\frac{0.1}{0.0351} + \sqrt{0.498}$$

$$\left(\frac{1}{0.0351}\right) 0.1 + \sqrt{49.8x10^{-2}}$$

$(28.490)0.1 + \sqrt{49.8x} \sqrt{10^{-2}}$
$2.849 + 7.057x10^{-1}$
2.849+0.7057
=3.5547

11. Two men each working for 8 hours a day, can cultivate an acre of land in 4 days. How long would 6 men each working in 4 hours a day take to cultivate 4 creas? (3mks)

Men	Hours	Days	acres
2	8	4	1
6	4	?	4

2=4
2/6x44x8/4x4/1
24/3=8 days

12. The sum of interior angles of a regular polygon is 1080°. Find the size of each exterior angle. (3mks)

(2n-4)90
(2n-4)90=1080
180n-360=1080
180n=1080+360
$\underline{180n}=\underline{1440}$
180 180
N=8
1080/8=135

180-135=45°
Or
360/8=45°