SECTION A (40 Marks)

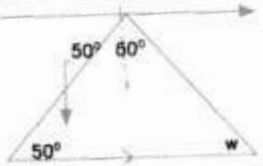
1. 201
+21
222.

2. 40 = XL
+9 = IX
49 = XLIX.

3. 1, 4, 9, 16, 25, 36
1x1=1
2x2=4
3x3=9
4x4=16
5x5=25
6x6=36

4. 1m = 100cm
2.5m = 2.5x100cm
2.5m = $\frac{25}{10}$ x100cm
2.5m=250cm
5cm = 1piece
250cm=$\frac{250}{5}$pieces
250cm=50pieces

5. $\frac{10}{10} - \frac{8}{10} = \frac{2}{10}$
$\frac{2}{10} = 0.2$
Probability of failing is 0.2.

6. 

W + 50° +60° = 180°
W + 110° =180°
W +110°–110°=180°-110°
W = 70°.

7. $2^n - 1$ = proper subsets
$2^n - 1 = 15$
$2^n - 1 + 1 = 15 + 1$
$2^n = 16$
$2^n = 24$
n =4
n(R) = 4.

8. Difference in temp.
27°C–(– 5°C)
27°C+5°C
32°C.

9. $123_{five} = (1x5^2)+(2x5^1)+(3x5^0)$
$= 1x5x5+2x5+3x1$
= 25+10+3
$=38_{ten}$.

10. C = πd
= $\frac{22}{7}$x28cm
= 22 x 4cm
= 88cm

11. 802.000
+ 4
802.004

12. (0.8x25)+(75x0.8)
0.8(25+75)
0.8(100)
8 x 10Ø
1Ø
80

13. 2ab – 4a
=2a (b–2)

14. Red : Blue
2 : 3
Total ratio
2+3=5
3parts =15pens
3parts = $\frac{15pens}{3}$
$\frac{3}{3}$
1part = 5pens
2parts = 2x5pens
2parts =10pens
10 red pens were in the box

15. $8000 = 8 \times 10^3$

16. 180° The bearing of
+ 60° Q from P is 240°
240°

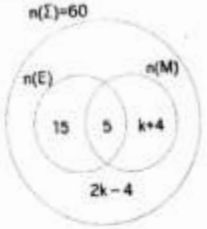
17. 1ball rep. 25balls
4balls rep.4x25balls
4balls rep.100balls.

18. Total weight of 5pupils
30kg x 5 = 150kg.
Total weight of 6people
36kg x 6 = 216kg
Weight of the teacher
216kg – 150kg = 66kg

19. Speed = Distance÷Time
Speed= 120km ÷ $\frac{45hr}{60}$
Speed = 120km x $\frac{60}{45hrs}$
Speed = $\frac{7200km}{45hrs}$
Speed =160km/hr.

20. 5 – 3(y – 1) = 17
5 – 3y – 3 = 17
5 – 3 – 3y = 17
2 – 3y = 17
2 – 2 – 3y = 17 – 2
$\frac{-3y}{-3} = \frac{15}{-3}$
y = -5.

SECTION B (60 Marks)

21. 

(b) Value of k
2k – 4 = 16
2k – 4+4 = 16+4
$\frac{2k}{2} = \frac{20}{2}$
k = 10

(c) n(M) = 5 + 4 +5
= 14

22.

2	30	40	50
2	15	20	25
2	15	10	25
3	15	5	25
5	5	5	5
	1	1	1

2x2x2x3x5
120min
After 120min or
(120+ 60) = 2hrs

(b) 10 : 30am
- 2 00hrs
8 : 30am

23a)

Mks	Pupils	Total
50	4	200
85	2	170
60	3	180
95	2	190
100	1	100

$= \frac{200+170+180+190+100}{4+2+3+2+1}$
$= \frac{840}{12}$
= 70
(4+3)pupils
7 pupils scored above average

24a) 1rev = Circumference
1rev = πd
1 rev = $\frac{22}{7}$ x 35cm
1rev = 22x5cm
1rev = 110cm
1km = 100000cm
33km = 33x100000cm
33km = 3300000cm
110cm = 1rev
3300000cm = $\frac{3300000}{110}$
3300000cm = 30000rev

(b) 1000m = 1km
110m = $\frac{110km}{1000}$
60min = 1hr
1min = $\frac{1hr}{60}$
$\frac{110km}{1000} \div \frac{1hr}{60}$
$\frac{110km}{1000} \times \frac{60}{1hr}$
6.6km/hr.
T = D ÷ S
33km ÷ 6.6km/hr.
$\frac{33km}{1} \div \frac{66km/hr.}{10}$
$\frac{33}{1} \times \frac{10hrs}{66}$
$\frac{330hrs}{66}$
5hr

25. **Sugar** Shs8000
Bread Shs4500x4 = Shs18000
Milk Shs1500x6 = Shs9000
Tea leaves Shs1000
Total Shs18000+ Shs8000 + Shs9000 + Shs1000 = Shs36000

(a) **Change** Shs50000 – Shs36000 = Shs14000

26a) 6:30am +500hrs = 11:30am

(b) 1st Drive from A to B
D = S X T
= 80km/hr. x 3hrs.
= 240km

2nd Drive from B to C
D = S x T
= 30km/hr. x 2hrs
= 60km
Av. Speed = $\frac{240km+60km}{3hrs+2hrs}$
$= \frac{300km}{5hrs}$
= 60km/hr.

27a) $\frac{1.8 \times 2.4}{2.7+0.9}$
2.7
+0.9
3.6
$\frac{1.8 \times 2.4}{3.6}$
$\frac{18 \times 24 \div 36}{10\ 10\ 10}$
$\frac{18 \times 24 \times 10}{10\ 10\ 36}$
$\frac{12}{10}$
1.2

(b) 5.68×10^{-2}
$568 \times \frac{1}{100}$
$\frac{568}{100} \times \frac{1}{100}$
$\frac{568}{10000}$
= 0.000568.

28a) $V = \pi r^2 h$
$V = \frac{22}{7}$x7cmx7cmx100cm
V = 22X7cmx1cmx100cm
$V = 15400cm^3$
Since Vol. of A = Vol. of B
$22cmx20cmxh = 15400cm^3$
$\frac{440cm^2 xh}{440cm^2} = \frac{15400cm^3}{440cm^2}$
h = 35cm

(b) $1000cm^3 = 1$ litre
$15400cm^3 = \frac{15400litres}{1000}$
$15400cm^3 = 15.4$litres
Tank A holds 15.4litres.

29. Let Peter's age be k
Then James' age will be 3k
In 5yrs time,
Peter's age will be k + 5
James' age will be 3k + 5
(3k + 5) – (k + 5)= 30
3k + 5 – k – 5 = 30
3k – k + 5 – 5 = 30
$\frac{2k}{2} = \frac{30}{2}$
k = 15.
James now is 3k + 5
(3x15)+5
45 +5
50

(b) In 25 years
Peters age will be
k + 25yrs.
15+25yrs.
40yrs.

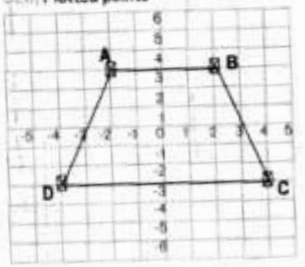
30. Given that y = 2x +1

x	3	2	½	3	0
y	7	5	2	7	1

y = 2x +1	2x +1 = y
= 2x3 +1	2x +1 = 5 y
= 6 +1	2x+1–1=5–1
= 7	$\frac{2x}{2} = \frac{4}{2}$
	x = 2

y= 2x +1	2x + 1 = y	y = 2x + 1
y =2x ½ +1	2x + 1= 7	y = 2x0 +1
y = 1 + 1	2x+1 –1=7–1	y=0 +1
y = 2	$\frac{2x}{2} = \frac{6}{2}$	y =1
	x = 3	

31. P x R x T = S.I
P x $\frac{5}{100}$ x 2 = S.I
P x $\frac{10}{100}$ = S.I
$\frac{P}{10}$ = S.I
P + S.I = A
P + $\frac{P}{10}$ = Shs264,000
$\frac{10}{10}$x P+PX1Ø = Shs264,000X10
10P + P = Shs2,640,000
$\frac{11P}{11} = \frac{Shs2,640,000}{11}$
P = Shs240,000
Mustafa deposited Shs240,000

32a) Plotted points


(c) The name of the figure is a trapezium.

(d) Area = ½ h (a + b)
= ½ x6(4 + 8)
= ½ x6 x12
= 1 x 3 x 12
= 36sq units.