THE REAL PRIVATE TEACHER GUIDES MTC NEXT TO PLE –5 2022

1. 6 + 4 x 6
6 + 24
30

2. $(G)^1 = \{3, 5, 7, 9\}$
$n(G)^1 = 4$

3. Tues – 50 = ---- finite 7
2 – 50 = -----finite 7
2 – (50÷7) = --- finite 7
2 – (7 r 1) = ---- finite 7
2 – 1 = 1 finite 7
1 stands for Monday. It was Monday.

4. 16 x k = 48 x 4
$\frac{\cancel{16}k}{\cancel{16}} = \frac{\cancel{48}^3 \times 4}{\cancel{16}_1}$
K = 3 x 4
K = 12

5. $^1/_4 : {}^1/_3 = {}^1/_4 \div {}^1/_3$
$= {}^1/_4 \times {}^3/_1$
$= {}^3/_4 \times \frac{\cancel{100}}{25\%}$
= 3 x 25%
= 75%

6. Total Surface Area
6 x S x S
6 x 3cm x 3cm
6 x $9cm^2$ = $54cm^2$

7. 1, 3, 6, 15, 21
1 + 2 = 3
3 + 3 = 6
6 + 4 = 10
10+5 = 15
15+6 = 21
21+7 = 28

sum
1 5
+2 1
3 6

8. 4^1 : 30pm 30+45=75
\+ 2 : 45hrs 75÷60=1rem15
7 : 15pm

9. Value of 2
4213_{five}
2 x 5 x 5
2 x 25 = 50

10. 2. 75 x 10^{-3}
$\frac{275}{100} \times \frac{1}{1000}$
$\frac{275}{100000} = 0.00275$

11. Fraction not made from Japan
$^8/_8 - {}^3/_8 = {}^5/_8$
8 parts = 144 cars
1 part = 144 ÷ 8
1 part = 18
5 parts = 18 x 5
5 parts = 90 cars
90 cars were not made in Japan.

12. $\frac{4.5 + 5.5}{2}$ 4 . 5
+5 . 5
10 . 0
10
2 = 5

13. (2n – 4) – (2 – n)
2n – 4 – 2 + n
2n + n – 4 – 2
3n – 6

14. 12 days need 4men
1 day needs 12 x 4men
1 day needs 28men
2 days need (48÷2)men
2 days need 24men

15. $-10^0C + 5^0C$
-5^0C

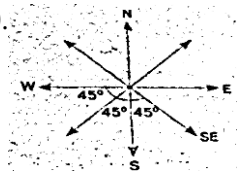
16. Perimeter
= Circumfrence + diameter
$= {}^1/_2\pi D + D$
$= \frac{1}{2_1} \times \frac{\cancel{22}^{11}}{\cancel{7}_1} \times \frac{\cancel{35}^{5cm}}{} + 35cm$
= 1 x 11 x 5cm + 35cm
= 55cm + 35cm
= 90cm

17. Job : Bob
2 : 3
Total ratio
2 + 3 = 5
3 parts = Shs15,000
1 part = Shs15,000÷3
1 part = Shs5,000
5 parts = Shs5,000 x 5
5 parts = Shs25,000
They shared Shs25,000

18. Let the buying price be y
100% - 20% = 80%
$\frac{80}{100} \times y$ = Shs1,200,000
$\frac{\cancel{10}}{\cancel{10}} \times \frac{8y}{8} = \frac{Shs\cancel{12,000,000}}{8}$
1,500,000
y = 1,500,000

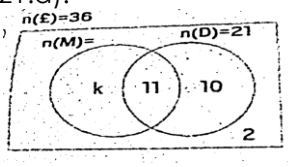
19. (3.6 x 48) + (3.6 x 52)
3.6(48+52)
$\frac{36}{\cancel{10}} \times \cancel{10}0$
36 x 10 = 360

20.



He will be facing South-East direction.

21.a).



b). The value of k
k + 11+10+2 = 36
k + 23 = 36
k + 23 – 23 = 36 – 23
k = 13

22a). $\frac{3.6 - 2.52}{0.4 \times 0.018}$ $\frac{3.60 - 2.52}{1.08}$
$\frac{1.08}{0.4 \times 0.018}$
$\frac{108}{100} \div \left[\frac{4}{10} \times \frac{18}{1000}\right]$
$\frac{\cancel{100}^6}{\cancel{100}} \times \frac{10}{4} \times \frac{\cancel{1000}}{\cancel{18}_1}$
$\frac{6 \times 10 \times 10}{1 \times 4 \times 1}$
$\frac{6 \times \cancel{100}^{25}}{\cancel{4}}$
6 x 25 = 150

b). Let k be the friction
k = 0.1666----------
10 x k = 0.1666------- x 10
10k = 1.666-------- (i)
10x10k = 1.666-------- x 10
100k = 16.666------- (ii)
Subtract (ii) – (i)
100k = 16.666------
\- 10 = 1.666-----
90k = 15.000------
$\frac{90k}{90} = \frac{15}{90}$
$k = {}^1/_6$

23Let the sister's age be k

Time	Sister's	Barbara's
Now	k	$\frac{1}{3}$ k
6 years time	k + 6	$\frac{1}{3}$k + 6

K + 6 = $2(\frac{1}{3}k + 6)$
$K + 6 = {}^{2k}/_3 + 12$
$3xk+3x6 = \frac{2k}{\cancel{3}} \times \cancel{3} + 12 \times 3$
3k + 18 – 18 = 2k + 36 – 18
3k = 2k + 18
3k – 2k = 2k – 2k + 18
k = 18
Sister's age = 18yrs
Barbara's age = $\frac{1}{3}$ x k
$= \frac{1}{\cancel{3}} \times \frac{\cancel{18}^6}{} = 6yrs.$

24.(i) Value of m
$m + 44^0 + 56^0 = 180^0$
$m + 100^0 = 180^0$
$m + 100^0 - 100^0 = 180^0 - 100^0$
$m = 80^0$
(ii) Value of n
$n = 44^0$ (vertically opposite <S
(ii). Value of W
W = n(Alt.int<S are equal)
Since $n = 44^0$
Then **w** = 44^0

25. (a)
Ugsh4,500 = 1Euro(£)
Ugsh639,000 = $\frac{639\cancel{000}}{4\cancel{500}}$ Euros
$= \frac{\cancel{6390}^{142}}{\cancel{45}_1}$ = 142 Euros

b).
1US($) = Ugsh3,700
520US($) = Ugsh3,700x520
520US($) = Ugsh1,924,000
Ugsh25 = 1Ksh
Ugsh1,924,000 = $\frac{Ksh\cancel{1,924,000}^{76,960}}{\cancel{25}_1}$
Ugsh1,924,000 = Ksh76,960

26. a)

PF	No	No
5	35	45
3	7	9
3	7	3
7	7	1
	1	1

LCM = 5 x 3 x 3 x 7 = 315
Both Sirens sounded after 315 minutes.

b).

Hr	Min	1hr=60min
11	30	315
+ 5	15	60
16	: 45hrs	**5hrs 15min**

27a).
Sugar
1kg = 1000g
4kg = 4 x 1000g = 4,000g
$\frac{4,000g}{\cancel{500}g}$ = 8 groups of 500g
8 x 2,000 = 16,000

Milk:
1 litre = sh.1,500
$1^1/_2$ litres = $1^1/_2$ x sh.1,500
$= {}^3/_2$ x sh.1,500
= sh.2,250

Book:
1 doz = sh.6,000
1book = sh.6,000÷12=sh.500
4books= 4 x sh.500 = sh.2,000
Total: sh.16,000 **+** sh.2,250 **+** sh.2,000 = sh.20,250

b). sh.50,000
- sh.20,250
Sh.29,750

28. a) Let the exterior angle be **y**

Exterior angle	Interior angle	sum
y	5y	180^0

$y + 5y = 180^0$
$6y = 180^0$
$\frac{6y}{6} = \frac{180^0}{6}$
$y = 30^0$
exterior angle $= 30^0$

b). Number of sides
$n = \frac{360^0}{\text{ext}<}$
$n = \frac{360^0}{30^0}$
$n = \frac{36^{12}}{3}$
n = 12 sides.

c). <sum $= 180^0 \times (n - 2)$
$= 180^0 \times (12 - 2)$
$= 180^0 \times 10$
$= 1800^0$

29a). No eggs collected
50 x 144 eggs
7,200 eggs
No eggs
30 eggs need 1tray
7,200 eggs need (7,200 ÷30)trays
7,200 eggs need 240 trays

b). 1 tray costs Shs10,000
240 trays cost Shs10,000x240
240 trays cost Shs2,400,000

30a).
Drinks = $\frac{1}{3}$ Food = $\frac{1}{2}$
Drinks + Food
$\frac{1}{3} + \frac{1}{2} = \frac{(2+3)}{6} = \frac{5}{6}$
Remainder
$= \frac{6}{6} - \frac{5}{6} = \frac{1}{6}$
Rent
$= \frac{25}{100} \times \frac{1}{6}$
$= \frac{1}{4} \times \frac{1}{6} = \frac{1}{24}$
Total fraction
$\frac{5}{6} + \frac{1}{24} = \frac{20-1}{24} = \frac{19}{24}$
Fraction left
$\frac{24}{24} - \frac{19}{24} = \frac{5}{24}$
5 parts = Shs60,000
5 parts = (Shs60,000 ÷ 5)
5 parts = Shs12,000
24 parts = Shs12,000x24
24 parts = Shs288,000
He earns Shs288,000

b). Amount spent on rent
$\frac{1}{24}$ x Shs~~288,000~~ 12,000
1 x Shs12,000
Shs12,000 spent on rent

31. 1 rev = circumference
1 rev = πd
1 rev = $\frac{22}{7}$ x ~~28~~^{4}cm
1 rev = 22 x 4cm
1 rev = 88cm
5000rev = 5000 x 88cm
5000rev = 440,000cm
100,000cm = 1km
440,000cm = $\frac{440{,}000\text{km}}{100{,}000}$
440,000cm = 4.4km

32a)Number of pieces packed along;
The length = $\frac{40}{5}$ = 8 pieces
The width = $\frac{36}{5}$ = 7 pieces
The height= $\frac{20}{5}$ = 4 pieces
(8 x 7 x 4) pieces = 224 pieces.

b). Volume of pieces of soap
5cm x 5cm x 5cm x 224
125cm^3 x 224
28,000cm^3.
Volume of the big box
V = 40cm x 36cm x 20cm
V = 28,800cm^3
Volume of the space left.
28,800cm^3
- 28,000cm^3
800cm^3