THE REAL PRIVATE TEACHER GUIDES MTC NEXT TO PLE –2 2022

1.
```
      4 0 4
   9 | 3636
     4x9=36
       03
     0x9=  00
           36
     4x9=  36
           00
```

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

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

$\frac{6-3}{4}$

$\frac{3}{4}$

3). 44444
= Forty four thousand four four hundred thirty four.

4. $12 - 12$

$12 - 12 - 2k = 2 - 12$

$-2k = -12$

$-2 \quad -2$

$= {}^{+}6$

5. $k + 70^0 + 50^0 = 180^0$

$K + 120^0 = 180^0$

$K + 120^0 - 120^0 = 180^0 - 120^0$

$K = 60^0$

6. $7.5 \times 6 + 7.5 \times 4$

$7.5(6+4)$

7.5×10

75×10

$10 = 75$

7. 1000g = 1kg

8500g = $\frac{8500}{1000}$kg

8500g = 8.5kg

8. 1101_{two}

$+ \quad 110_{two}$

0111_{two}

9. hrs min

4 : 30_{pm} time taken

$-\ 2$: 15_{pm} 2hrs and 15min

2 15

10. 1, 8, 27, 64, 125, 216

$1 \times 1 \times 1 = 1$

$2 \times 2 \times 2 = 8$

$3 \times 3 \times 3 = 27$

$4 \times 4 \times 4 = 64$

$5 \times 5 \times 5 = 125$

$6 \times 6 \times 6 = 216$

11. $\frac{1}{2}\pi d + d$

$\frac{1}{2} \times 3.14 \times 50$

$\frac{1}{2} \times \frac{314}{100} \times 50$cm

$\frac{15700}{100}$cm

$= 157$cm

12. 5 men take 6 days.

1 man takes 5x6 days.

1 man takes 30 days.

3 men take (30÷3) days

3 men take 10 days

10 – 6 = 4 more days

13. CM = 900

IX = + 9

CMIX = 909

14. Fri + 45 = (finite 7)

5 + 45 = (finite 7)

50 = (finite 7)

50 ÷ 7 = 7 rem 1 (finite 7)

5 + 45 = 1 (finite 7)

Fri + 45 = 1 (finite 7)

15. Average = $\frac{\text{sum of items}}{\text{No of items}}$

$= \frac{5y + 9 + 3y + 19}{4}$

$= \frac{8y + 28}{4}$

$= \frac{8y}{4} + \frac{28}{4}$

$= 2y + 7$

16. Total mass of 3 boys

3 x 24kg = 72kg

Total mass of 2 boys = 50kg

Mass of the 3rd boy

72kg – 50kg = 22kg

17. $\frac{1}{2}$ x AEx16cm = $\frac{1}{2}$ x20cmx8cm

1xAEx8cm = 1x20cmx8cm

$\frac{AE \times 8cm}{8cm} = \frac{20cm \times 8cm}{8cm}$

AE = 20cm

18. $\sqrt{144}$

```
2 | 144
2 |  72
2 |  36
2 |  18
3 |   9
3 |   3
  |   1
```

19. a = 0 and b = 7

$b^2 + m^a$

$7^2 + m^0$

$7 \times 7 + 1$

$49 + 1$

50

20. Circumference of the kraal

$C = 2\pi r$

$C = 21 \times \frac{22^{11}}{7} \times \frac{21^{3}}{}$cm

$C = 1 \times 11 \times 3$cm

C = 33cm

21a.) $k + 5 + 2k + 15 = 50$

$K + 2k + 5 + 15 = 50$

$3k + 20 = 50$

$3k + 20 - 20 = 50 - 20$

$\frac{3k}{3} = \frac{30}{3}$

$K = 10$

b). n(E) only

$= 2k + 15$

$= 2 \times 10 + 15$

$= 20 + 15$

$= 35$

22a). 0.43

$+0.32$

0.75

0.75 | 75 ÷ 25 | $\frac{75^{3}}{100} \times \frac{}{}$

0.25 | 100 100 | $\frac{100}{} \times \frac{25^{1}}{}$

$= 3$

b). Let the fraction be y

y = 0.2444……

10 x y = 0.2444…… x 10

10y = 2444……(i)

10 x 10y = 2444……..x10

100y = 24.444……(ii)

Subtract (ii) – (i)

100y = 24.444……

$-\ 10y = 2.444……$

90y = 22.000

90y = 22

90 90

$Y = \frac{1}{45}$

23. Fraction used

$\frac{1}{6_2} \times \frac{3^{1}}{4} = \frac{1}{8}$

Fraction left

$\frac{3}{4} - \frac{1}{8} = \frac{6-1}{8} = \frac{5}{8}$

5 parts = 2000 litres

1 part = (2000 ÷ 5) litres

1 part = 400 litres

8 parts = 8 x 400 litres

8 parts = 3200 litres

The tank holds 3200 litre when completely full.

24a). Distance = S x T
= 60km/hr x 2½hrs
= $\frac{\cancel{60}^{30}\text{km}}{\cancel{\text{hr}}} \times \frac{5\cancel{\text{hrs}}}{\cancel{2}}$
= 30 x 5
= 150km

b). Return journey
Time = $\frac{\text{Distance}}{\text{Speed}}$
= $\frac{150\cancel{\text{km}}}{100\cancel{\text{km}}/\text{hr}}$
A.v speed = $\frac{150\text{km} + 150\text{km}}{2\frac{1}{2}\text{hrs} + 1\frac{1}{2}\text{hrs}}$
= $\frac{300\text{km}}{4\text{hrs}}$
= 75km/hr.

25. Area of the trapezium
A = $^1/_2$ x h (a + b)
= $^1/_2$ x 14cm (16cm + 24cm)
= $^1/_2$ x 14cm x 30cm
= 1 x 7cm x 30cm
= 210cm^2
Area of the circle
A = πr^2
= $\frac{\cancel{22}^{11}}{\cancel{7}} \times \frac{\cancel{14}^{2}\text{ cm}}{\cancel{2}} \times \frac{\cancel{14}^{7}\text{cm}}{\cancel{2}}$
= 11 x 2cm x 7cm
= 154cm^2
Area of the shaded part
210cm^2
- 154cm^2
56cm^2

26a). **Sugar**
2$^1/_2$ x sh4,000
$\cancel{5}/_{\cancel{2}}$ x sh$\cancel{4,000}^{2,000}$
5 x sh2,000
Shs10,000
Shs10,000

Bread
Shs3,000
Blue band
Shs2,000
Soap
Shs8,000x2 =
Sh16,000

Mangoes
(24 ÷ 4) x Shs2,000
Shs12,000

Total
Shs16,000
Shs12,000
Shs10,000
Shs3,000
+Shs2,000
Shs43,000

b). **CHANGE**
Shs50,000
- Shs43,000
Shs7,000

27a). Value of **k**
Sum of the values
70 x 10
700
(40x2)+(kx4)+(60x3)+80 = 700
80 + 4k + 180 + 80 = 700
4k + 340 = 700
4k + 340 – 340 = 700 – 340
4k = 360
4 4
K = 90

b). Range = H – L
= 90 – 40
= 50

28. 3 – 2(2a – 2) = 4
3 – 4a + 4 = 4
3 + 4 – 4a = 4
7 – 4a = 4
7 – 7 – 4a = 4 – 7
- 4a = - 3
- 4 = - 4
a = $^3/_4$

b). (1xn^2)+(0xn^1)+(4xn^0) = 29$_{ten}$
1xn^2 x 0xn + 4x1 = 29
n^2 + 0 + 4 = 29
n^2 + 4 = 29
n^2 + 4 – 4 = 29 – 4
√n = √25
n = 5

29a). SI = P x R x T
= Shs**500,000** x $\frac{\cancel{20}^{10}}{100}$ x $\frac{\mathbf{6}}{\cancel{12}_{6}}$
= Shs**5000** x **10** x **1**
= Shs**50,000**

b). AMOUNT = P + SI
Shs500,000
+ Shs50,000
Shs550,000

30. Let the son's age be **k**

Time	**Son's age**	**Juliet's age**	**Total**
Now	k	3k	
5yrs	k+5	3k+5	50yrs

K + 5 + 3k + 5 = 50
K + 3k+5+5 = 50
4k + 10 = 50
4k + 10 – 10 = 50 – 10
$\frac{4k}{4} = \frac{40}{4}$
K = 10
Juliet now is **3** x **k**
3 x 10
= 30years.

b). In **5**years time, the son's age will be
k + 5
= 10years.

31. 6S^2 = T.S.A
6S^2 = 96cm^2
$\frac{6S^2}{6} = \frac{96\text{cm}^2}{6}$
√S^2 = √16cm^2
S = 4cm
The length of each side is **4cm**

b). Volume = S x S x S
= 4cm x 4cm x 4cm
= 64cm^3

32. Value of **n**
4n+n+25%+n+15% = 100%
6n + 40% = 100%
6n + 40% - 40% = 100% - 40%
6n = 60%
$\frac{6}{n}$ $\frac{}{}$ $\frac{6}{10\%}$

b). Let her income be **y**
$\frac{40}{100}$ x y = 240,000
$\frac{40y}{100}$ = Shs240,000
$\frac{\cancel{100}}{\cancel{100}}$ x 40y = Shs240,000x100
$\frac{40y}{40}$ = $\frac{\text{Shs2,400,000}}{40}$
Y = Shs600,000
She earns Shs600,000