THE REAL PRIVATE TEACHER GUIDES MTC NEXT TO PLE –1 2022

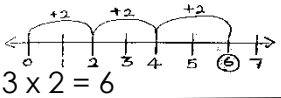
1. 9 8
+ 2
100

(2). 404040 = Four hundred four thousand forty

3. $2^n - 1$ = proper subsets
$2^n - 1 = 15$
$2^n - 1 + 1 = 15 + 1$
$2^n = 16$
$2^n = 24$
$n = 4$
$n(k) = 4$

2	16
2	8
2	4
2	2
2	1

4.



3 x 2 = 6

5. 3.87×10^3
3.87 x 10 x 10 x 10
387 x 10~~00~~
1~~00~~
387 x 10
3870

6. CDXLIV = CD XL IV
=400 + 40 + 4
= 444

7. 81, 64, 49, 36, 25, 16
9 x 9 = 81 7 x 7 = 64
6 x 6 = 36 5 x 5 = 25
4 x 4 = 16

8. 4kg = 1000kg
1kg = 1000kg ÷ 4
1kg = 250kg
7kg = 7 x 250kg
7kg = 1,750kg

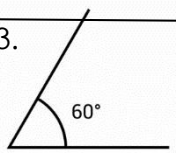
9. 1 tonne = 1000kg
4.5 tonnes = 4.5 x 1000kg
4.5 tonnes = 45 x 100~~0~~kg
1~~0~~
45 x 100kg
4500kg

10. $4\ 2_{five}$ 6 ÷ 5 = 1 rem 1
$+4\ 4_{five}$ 9 ÷ 5 = 1 rem 4
$1\ 4\ 1_{five}$
9 80

11. ~~10~~ : ~~20~~ a.m
– 40
9 : 40a.m

12. Buying price
Shs48,000
+ Shs 2,000
Shs50,000

13.



14. 2 – 3 =…… (finite 5)
5 + 2 – 3 = …… (finite5)
7 – 3 = 4 (finite5)
2 – 3 = 4 (finite5)

15. $(8 \times 10^2)+(6 \times 10^1)+(4x10^0)+(3x10^{-2})$
8x10x10 + 6x10 + 4x1 + 3/100
800 + 60 + 4 + 0.03
864.03

16. 50kg ÷ ½kg packets
50 x 2 packets
= 100kg

17. 1km = 1000m
36km = 36 x 1000m
36km = 36000m
1hr = (60 x 60)sec
1hr = 3600sec
S = D ÷ T
36000 m
3600sec
10m/sec

18. (4.8 x 108) – (8 x 4.8)
4.8 (108 – 8)
4.8(100)
48 x 10~~0~~
~~10~~
48 x 10
480

19. 9n – 5 – 2g + g
9n – 2n – 9 - 5
7n + 4

20. $^3/_4$ x 1000kg
3000kg
4 =750kg

21.a). Value of x
X + 25 + 10 = 50
X + 35 = 50
X + 35 – 35 = 50 – 35
x = 15

b). n(∑) = 2x + 10 + x + 25
= 2 x 15 + 10 + 15 + 25
= 30 + 25 + 25
= 80

22.a)

ITEM	QTY	UNIT COST	AMOUNT (Shs)
Rice	4kg	4,000	16,000
Bread	3loaves	5,000	15,000
Milk	2litres	2,000	4,000
Total			35,000

b). **Rice** Shs4000 X 4 Shs16,000
Bread Shs15,000 3 5,000
Milk Shs35,000 - Shs31,000 4,000

Milk
Shs4,000
2 = Shs2,000
Amount paid
100% - 10% = 90%
90 x Shs350~~00~~
1~~00~~
90 x Shs350 = Shs31,500

21a). Arrival time at **C**
7 : 30am (3hrs + 2hrs)
+5 00hrs 5hrs
12 : 30pm

b). 1st Drive
D = S x T
D = S x T
D = 40km/hr X 2hrs
D = 40km x 3
D = 120km

2nd Drive
D = S x T
D = 30km/hr x 2hrs
D = 30km x 2
D = 60km

Av. Speed = 120km + 60 km / 3hrs + 2hrs
= 180km / 5hrs
= 36km/hr

24a). ¾ – ½ + ⅓
¾ + ⅓ - ½
9 + 4 – 6 / 12
7/12

b). [36/1000 x 9/10] ÷ [18/100 x 3/10]
$\frac{36^2}{1000} \times \frac{9^2}{10} \times \frac{100}{10} \times \frac{10}{18_1} \times \frac{3}{2_1}$
2 x 2 x 1 x1 = 4
10x 1x 1 x1 10 = 0.4

25a). $\frac{2(k-1)\text{~~cm~~}}{\text{~~cm~~}} = \frac{(k+4)\text{~~cm~~}}{\text{~~cm~~}}$
2(k – 1) = k + 4
2k – 2 = k + 4
2k – 2 + 2 = k + 4 + 2
2k = k + 6
2k – k = k – k + 6
K = 6

b). **Length Width Height**
(k + 4)cm (k + 1)cm (k + 2)cm
(6 + 4)cm (6 + 1)cm (6 + 2)cm
10cm 7cm 8cm
V = L x W x H
= 10cm x 7cm x 8cm
= $70cm^2$ x 8cm
= $560cm^3$

c). **Total lengths of its edges**
= 4L + 4W + 4H
= 4 x 10cm + 4 x 7cm + 4 x 8cm
= 40cm + 28cm + 32cm
= 100cm

26a). **Let Kalanzi's age be k**

Time	Kalanzi	Omoding	Differnce
Now	k	4k	
5years Ago	k -5	4k – 5	36

(4k – 5) – (k – 5) = 36
4k – 5 – k + 5 = 36
4k – k + 5 – 5 = 36
3k = 36
3 3
K = 12
Kalanzi now is 12 years old.

(b). 5 years ago, Omoding was
(4k – 5) years
(4 x 12 – 5)years
(48 – 12)years
36years

27a). US$ = Ugsh**3650**
US$ = Ugsh**3650** x **500**
US$ = Ugsh**1825,000**

b) Ugsh**1.5**=TZsh**1**
Ugsh**450,000**=TZsh**300,000÷1.5**
Ugsh**450,000**=TZ**300,000**

One pays TZshs**300,000** for a bicycle.

28(i) a = $^{+}7$ (ii) b = $^{-}3$ (iii) c = $^{+}4$

(b) Sentence = $^{-}3 + {}^{+}7 = {}^{+}4$

29(a). Let the interior angle be **y**

Ext< + Int< = 180^0

Y + 144^0 = 180^0

Y + $144^0 - 144^0 = 180^0 - 144^0$

Y = 36^0

Exterior angle is 36^0

No of sides = 360^0

$= \frac{360^0}{36^0}$

= 10 sides

b). <sum = 180^0 (n – 2)

= 180^0 (10 – 2)

= 180^0 x 6

= 1440^0

30a).100% - 60% = 40%

b). Number of girls in school

60 x 1800 = 60 x 18

100 = 1080

c). Number of boys

40 x 1800 = 40 x 18

100 = 720

Boys who are boarders

$\frac{3}{\cancel{5}} \times \frac{\cancel{720}^{180}}{}$

3 x 180

540

31.a)

Marks	**No. of pupils**	**Total marks**
20	**5**	100
16	5	**80**
10	12	120
15	8	**120**

b). Number of pupils

5 + 5 + 12 + 8 = 30

c). Average = $\frac{100 + 80 + 120 + 120}{30}$

$= \frac{420}{30}$

= 14

32. Volume of tank **B**

35cm x 28cm x 44cm

43120cm^3

$\Pi r^2 h = V$

$\frac{22}{\cancel{7}} \times r^2 \times \frac{\cancel{70}^{10}}{}$cm = 43120$cm^3$

$\frac{\cancel{22}r^2 \times \cancel{10cm}}{\cancel{22} \quad \cancel{10cm}} = \frac{43120cm^3}{22 \times 10cm}$

$\sqrt{r^2} = \sqrt{196cm^2}$

r = 14cm

Tank **B** holds

$\frac{43120cm^3}{1000cm^3}$ litres = 43.12 litres