**F3 MATHS PP1 TERM 3 2023 MARKING SCHEME**

 

1. Share of elder boy =

 Share of younger boy=

 =

 Girls share =

 

 % share of younger boy to girls share

 

1. 32(t+1)+32t=30

 32t . 32+32t =30

 32t(32+1)=30

 32t×10=30

 32t=31

 2t=1

 t= ½

1. 2x + 20 + x-50=180

3x – 30 = 180

3x = 210

3 3

x = 70

Each exterior angle = 70 – 50

= 200

No. of sides = 360

 20

 = 18

|  |  |
| --- | --- |
| Commission = 56,000 – 10 000 = Ksh. 46,000Sales above 100 000 = 500 000 – 100 000 = Ksh. 400 000Rate of commission = 46000 x 100% 400 000 = 11.5% | M1M1A1  |

1. 50,48,46,……………

 = 50 + 7x (-2)

 = 36

 = (2 x 50 + (20 – 1) (x – 2)

 = 620

1. (a) x(x + 4) = 96

 + 4x – 96 = 0

 (x-8) (x + 12) = 0

 x = 8

 Length = 12

 Width = 8

 (b) Perimeter = 2 (8 + 12) = 40m

1. M1 = y

 x

 = 3 + 6

 2 – 8

 = 9 = -3

 -6 2

 M1 x M2 = -1

- x m2 = -1

 M2 =

 Taking (x,y) and P(2,3)

 y-3 = 2

 x- 2 5

 3y – 9 = 2x -4

 3y = 2x + 5

 y = 2x + 5

 3 3

1. PQ = q - p

 ~ ~

 = (3ɩ -2j)- (2ɩ +3j)

 = 3ɩ - 2j - 2ɩ - 3j

 = I – 5j

 /PQ/=

 =

 = 5.099

1. 12 – 2x ˃ 18x – 8

 = 20x ˃ - 20

 x ˂ 1

 18x – 8 ≥ -28 – 2x

 20x ≥ - 20

 X ≥ -1

 -1 ≤ x ˂ 1

 Integral solutions: 01, 0.

1. b 2 = a.c

2

 -20 2 = 25k

 2

 100 = 25 k

 K = 100

 25

 = 4

12

 AB=

 -2(K+12) -9 (2K-16)=10

 -2K-24-18K+144=10

 -20K = -110

 ∵K=5.5

13 I=

90,000 x 6.5 x 5

 100 x 2

= sh.29,250

 A =(90,000+29,250)

 =SH. 119,250

14

 =

 2(0.48) – 0.30

 0.96 – 0.30

 = 0.66

1. 3x – 180 = 30 or 330

3x – 180 = 30

3x = 210

x = 700

OR

3x – 180 = 330

3x = 510

 x = 1700

1. Min Area = (19.95( (24.95)

= 497.7525

Max. Area = (20.05)(25.05)

= 502.2525

502.2525 – 497.7525

 2

2.25 x 100

1. = 0.45%

|  |  |  |
| --- | --- | --- |
| **17**. Time of = 2 ½ hrsFlowVolume in 2 ½ hrs = 6.16 x 10 x 2 ½ x 3600 = 554400 cm3Volume of tank = 3h = 554400 10000 H = 554400 m 30000 = 18.48m | B1M1M1M1A1 |  |
|  Volume in per sec. = 6.16 x 10 – 11.6 = 61.6 – 11.6 = 50cm3Volume of tank = 1.2 x 30000 x 100Time = 3600000 sec 50 = 72000 3600 = 20 hrs | M1A1M1M1A1 (10) |  |

18

 

 Triangle ABC

 AC = 4.1cm

 Bisecting <S

 Circle

 Radius = 1.2cm

 Area = ½ x 8 x 6 sin 300 - x 1.22

 = 4 x 6 x 0.5 – 4.5257

 = 12 – 4.5257

 = 7.4743

19



 

20. 

|  |  |  |  |
| --- | --- | --- | --- |
| **21** | (a) Sum of arithmetic progression    Last five terms  term is a + 40d  term is a + 39d  term is a + 38d  term is a + 37d  term is a + 36dtotal  Solving (i) and (ii) simultenously;    (b)  Last term is a + 40d (c)   | M1M1M1A1A1M1A1M1M1A1 | Formation of each equationSolving two equations simultaneously For common differenceFor the first term |

22.a)



b) i)10.8 x2 = 21.6 km

 ii)0400 + 1

 iii) 1530 + 1

c) A = ½ a b sin

 = ½ x 12 x 20 sin 800

 = 118.18 km2

|  |  |  |  |
| --- | --- | --- | --- |
| **23** | (a)     cm(b) Let  be    (c) Let  be  (d) Area of ΔACD  | M1A1M1M1A1M1M1A1M1A1 | Accept 47.940,47.960 depending on the method22.890 is possible. |

24

 

 h = 6

 15 + h 10

 10h = 90 + 6h

 4h = 90

 H = 22.5

 H = h + 15

 = 37.5



 L = 2 + 9

 = .25

 = 22.70

 

 L = 2 + 25

 =

 = 37.83

S.A = (2

= (3.142 x 5 x 37.83 – 3.142 x3 x 22.70) + (3.142.9)

= 380.3391 + 28.278

= 408.6111 cm2

b) Volume = AH – Ah

= ( x 3.142 x 25 x37.5)- (3.142 x 9 x 22.5)

= 981.875 – 212.085

= 769.79 cm3