MOMALICHE 10 CYCLE 2

MARKING SCHEME

Mathematics paper 121/1

|  |  |  |
| --- | --- | --- |
| 1. | =  =  = = 0.8 |  |
| 2 |  |  |
| 3 | V.S.F =  L.S.F =  = 5.848  height of smaller tank = = 17.10 cm |  |
| 4 | 2yz |  |
| 5 | Exterior angle = 180 -96  Rem. Ext. angles 360 – 96 = 264✓  One ext. angle with 1470  180 -147 = 33  No of sides = = 8 +1✓  = 9 ✓ |  |
| 6 | 1 Riyal buying = 19.68 shs  5480 = 107846.4  x 107846.4  = 71897.6  Remainder = 107846.4 – 71897.6  = 35948.8  Selling 1 Riyal = 19.74 shs  ? = 35948.8  = 1817.4 Riyal |  |
| 7 |  |  |
| 8 | k = d = 6 = 3  y 2  matrix S = |  |
| 9 |  |  |
| 10 |  |  |
| 11 | Reduce 5y+2x=7 in the form y=mx+c  y=  But gradient =  =  K=3 |  |
| 12 | .  2  .  .  . |  |
| 13 | (2x + 3)30 < 98-3x)30 < 95x +6)30  2 5 3  30 x 45 < 48 – 18x  x < 1/16  48 – 18x < 50x + 60  x > -12/68 (-0.1765)  integer of x = 0 |  |
| 14 | = (16 + ) cm2  = 52.66cm2 | B1 |
| 15 | Let 1cm represent 100km    PR = 7.1cm ± 0.1  Distance PR = 710km ± 10km |  |
| 16 | |  |  | | --- | --- | | Mass(kg) | frequency | | 41-50 | 20 | | 51-55 | **25** | | 56-65 | 40 | |  |
| 17 | i) Area of one of root (segment)  shaded area = area of section – Area triangle  120 x πr2 – 1  360 r  1/3πr2 = ½ r2 sin 1200  100π - 100 x 0.8660   1. 2   = 100 (3.142 – 0.8660)   1. 2   = 100(1.0473 – 0.435)  100 x 0.6143  = 61.43 sq.m  ii) Curved surface of roof  120 x 2πr x 10  360  2π x 10 x 10  3  2 x 3.142 x 100  3  2/3 x 3.142  209.47. sp.m  b) Total area = 209.47 + 2(61.43)  209.47 + 122.86  = 332.33sp.m  Cost = 332.33 x 80  = sh. 26,586.40  = sh. 26,586. |  |
| 18 | 1. Volume = ¾ x 1.7 x 1.4 x 2.2   = 3.927 x 1000  = 3927 litres   1. i) Volume of packet   Base area = x ½ x 16 x 16 sin 60o  Volume = x ½ x 16 x 16 sin 60o x 13.6  = 503cm3  ii)  = 7807   1. 7807 x 25   = 195,175/- |  |
| 19 | A1(-3, -2) B1(-1, -4) C1(-3, -8) D1(-5, -4)  A11(-1, 2) B11(3, 0) C11(-7, -2) D11(-3, -4)  A11(-4, 3) B111(-2, 5) C111(-4, 9) D111(-6,) |  |
| 20 | (a) = =  2y + 4 = x – 8  ⇒x – 2y – 12 = 0  (b) y = - 6, when y = 0  - 6 = 0 ⇒x = 12  ∴Coordinates of p (12,0)  (c) = -2  ⇒y = 24 – 2x  But when x = 0, y = 24  ∴Coordinates of Q are (0,24)  (d) QP =  = = 26.83 units |  |
| 21 | Det p=32-35=-3 M1  P-1=  = M1  p-1= A1  (i)  B2  (ii)  M1    Beans per bag=Ksh,3500  Maize per bag =Ksh.1400 A1  New price of beans =  Number of bags of beans=    =7bags  Bean : maize  7 : 14  1 : 2 A1 |  |
| 22 | 1. Let the coordinate of L=   OL=3OA, OA= OA:AL=1:2  . OL, x=3  L  Let coordinate N=  3ON=2OB ON=  N=  LN=  (b) Let M(x,y)  .  M  (c) Let T=  .  T T=  LT=  LB=  LB=3LT LB//LT since L is common , hence they are collinear. |  |
| 23 | (a   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | x | -2 | -1 | 0 | 1 | 2 | 3 | | y | 9 | 0 | -5 | -6 | -3 | 4 |   (b)    (c) roots -1 and 2.5  (d) y = 2x-2   |  |  |  | | --- | --- | --- | | x | 0 | 1 | | y | -2 | 0 |   1.7 and 2.8 0.1  (c) (x – 1.7) (x-2.8) = 0  x2 – 2.8x-1.7x+4.76=0  x2 – 4.5x+4.76 = 0 |  |
| 24 | a) cosC = 142 + 152  - 122  2 x 14 15  Cos C = 0.6595  C = 48.74º  b) 12 = 2r  sin 48.74º  r=  = 7.982cm  c) Area sector = 97.48 x3.142 x 7.9822  360  = 54.21cm2  Area = 1/2 x 7.9822 x sin 97.48  = 31.59cm2  Area sh = 54.21 – 31.59  = 22.62cm2 |  |