*MATHEMATICS FORM THREE MARKING SCHEME TERM I 2019*

1. *.* M1

 *=* M1

 *=* M1

 A1

M1

M1

A1

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|  |  | M1 for factorizing numerator and denominator M1 A1 |
|  |  | 3 Marks |

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|  | NO. | LOGS |  |
|  | 1.65424.573X1015.6X10-14.745X10-1= 0.4745 | 0.2185X2 = 0.43701.6602 + .74821.4084 =1.4084 .0286 3+=.6762 | M1M1M1A1 |

1. (a)

Gradient of L B1

(b) M1

 A1

 M1

 A1

Nonagon B1

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| 1. 2s + 3t = 1750 x 2 M1

 3s + 2t = 1500 x 3 M1 4s + 6t = 3500 9s + 6t = 4500 -5s = -1000 Shirt =shs.200 Trouser =shs. 450 A1 |
|  | Ksh = 6000 x 84.15 -300,0000 = ksh. 204, 900204, 900÷121.47= 1686. 84  | M1M1A1 |  |

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| 7x – 4 ≤ 9x + 2 ..(i)9x + 2 < 3x + 14(ii) Solving (i)7x – 4 ≤ 9x + 2-2x ≤ 6x ≥ -3Solving equation (ii)9x + 2 < 3x + 146x < 12x < 2Combining (i) and (ii)-3 ≤ x < 2 -3 – 2 -1 0 1 2 Integral values are-3, -2, -1, 0, 1 | ✓Solving equation (ii)✓Solving equation (ii)✓B1 Solution represented on number line✓A1 Integral values |
|
|  | 4 maks |

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|  | LCM = 7920 = 24x32x5x11GCD = 12 = 22x348 = 24x3264 = 23x3x11X = 22x32x5X = 180 | M1M1A1 | Factor notation GCD and LCMFactor notation 2numbers |
|  | Height of tower Distance of John from the foot tower  | M1M2A1 |  |
|  |   | M1M1A1 | Reciprocals and **multiplication** |
|  | L.S.FA.S.F.S.A |  |  |
|  | Let the digits be x and yx + y = 16 ……….. (i)original no. = 10x + yreversed no. = 10y + x(10y + x) – (10x + y) = 18 iix + y = 169y – 9x = 189y + 9x = 1449y – 9x = 18 18x = 126x = 7y = 9The no. is 79 | B1M1A1 | Both equations (i) and (ii) |
|  | 1. (i) 4p – 3q =

 P + 2q =   -11q =  q =     and | M1M1 |  |
|  | Maximum perimeter = 2(12.05 + 8.05) = 40.2cmActual perimeter = 2(12.0 + 18.0)= 40.0cmError = 40.2cm – 40.0cm = 0.2cm%error = (0.2 x100) 40 = 0.5% | M1M1A1 |  |
|  | 1. Let d be distance between N and M

Time taken from N-M T= M-N=Total | B1M1M1A1M1M1A1M1M1A1 |  |
|  | (a)(b) Area1 = ½ x 2 x 3 = 3cm2Area2 = ½ x 4(5+3) = 16cm2Area3 = ½ x 5 x 4 = 10cm2Area4 = ½ x2x4 = 4cm2Area5 = 4 x 4 = 16cm2Area6 = ½ x 4 x 4 = 8cm2Total area = (3+16+10+4+16+8)cm2 = 57cm2Actual area = (57x100)m2 = 5700m2(c) 10,000m2 = 1ha5700m2 = ?1 x 570010,000= 0.57ha | S1B1B2B1B1M1A1M1A1 | ScaleBase lineOffsets (all – offsets) A want B1 for at least 2 |
|  | 1. (X + ¾ ) (x – 2/3) = 0

X2 – 2/3x + ¾ x – 6/12 = 0X2 – 1/12x – 6/12 = 012x2 + x – 6 = 01. i) 9x + x2 – 136 = 0

x2 + 17x – 8x – 136 = 0x(x + 17) – 8(x + 17) = 0(x – 8) (x + 17) = 0X = 8Or x = -17Perimeter = 501. 2x2 = 136 – 0.0064

2x2 – 135.9936X2 = 97.9968X= 8.246Dimension 8.24m by 16.492m | M1M1A1M1M1 |  |

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| 20.  | a)PRS=200(s in the semi-circle)b) Obtuse POQ=1400( at the centre is twice that on the circumference)Reflex POQ=2200(s at a point add up to 3600)c)RPS=1800-(700+550+200+200)(sum of angles in a triangled) PSR=1800-(700+550+200)=350(opposite s of a cyclic quadrilateral add up to 1800)e) Reflex POS=1800+1400 = 3200 or 3600-400 =3200(s at a point) | B1,B1B1,B1B1B1B1B1B1B1 |  |
|  |  | 10mks |  |

21.

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| --- | --- | --- | --- | --- | --- |
| Length(cm) | Mid pt (x) | F | xf | CF |  |
| 118 -126 | 122 | 3 | 366 | 3 |  |
| 127 – 135 | 131 | 4 | 524 | 7 |  |
| 136 – 144 | 140 | 10 | 1400 | 17 |  |
| 145 – 153 | 149 | 12 | 1788 | 29 |  |
| 154 – 162 | 158 | 5 | 790 | 34 |  |
| 163 – 171 | 167 | 4 | 668 | 38 |  |
| 172 – 180 | 176 | 2 | 352 | 40 |  |
|  |  | 40 | 5888 |  |  |
| (a) (i) Modal class ⇒ 145 – 153 (ii) Median class 145 – 153(b) (i) Mean of feedingx = = 147.2(ii) Median = L (= 144.5 + ()9144.5 + x 9144.5 + 2.625= 147.125 | B1 B1 C.F columnB1 median classB1 mid pointB1 xF columnM1A1M1 SubstitutionM1 attempt to simplifyA1  |
|

. 22.



a) 84km, 0420

b) 80km, 0650

c) 1200

23.

a) ∆ ABC line AB = 7 cm and BC = 8 cm.

 Construction of ∡60o

(b) AC = 7.6 + 0.1 and

 ∡ ACB = 53 + 1o

(c) 2 sides bisector 1

 Circle drawn radius 4.4. ± 0.1

(d) Bisect ∡ ACB

 Bisection line to cut the circle to identify P

 ∡ PBC measure ≡

(a) AB = 7 cm, BC = 8 cm

 ∡ ABC = 60o

(b) AC = 7.6 + 0.1 cm

-

 ∡ ABC = 53o±0.1

 (c) Perpendicular bisectors of any two sides.

 Circle drawn

 Radius = 4.4.±0.1. cm

 (d) ∡ ACB bisected

 Bisection line drawn to cut circle at P

 ∡BPC = ∡BAC = 67o

 ∡ PBC = 88 ± 0.1o

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| 24. | a)< PAQ = <PAM + <QAM< PAM = sinθ1 =  Sin -1 (0.4286) = 25.380< QAM = <PAM = 25.38 →<LAP = 25.38x2= 50.76b) <PBQ = < PBM + <QBM< PBM = sin∝1 =  Sin-1 (0.5357) = 32.390< PBM = <QBM = 32.390<PBQ = 32.390x 2 = 64.78c)i)area of segment = area of a section – area of DTaking (i)  =  = 48.84 – 42.69 = 6.15cm2Taking (ii) = = 39.89 – 31.92 = 7.97cm2 = (6.15 + 7.97) cm2 = 14.12cm2 | M1A1M1A1M1B1M1M1B1A1 |  |
|  |  |  |  |