**MARKING SCHEMES MATHEMATICS PAPER 2**

1. No log

4.283 0.6317 All logs m1

-

0.9748 1.9889 +/- m1

0.6206

-

Log4.189=0.6221 1.7939 ÷/× m1

0.8267x1/3

1.8863 0.2756 CAO A1 (4mks)

1. Actual area = 8.8 x 2.6 = 22.88 M1

Value – Actual x 100 = 27 – 22.88 x 100 M1

Actual 22.88

18% A1

1. Make r the subject in the formular (3mks)

S= rt

R2 -t

S = r2 t2 M1

R2 - t

S2 r2 – s2 t = r2 t2 M1

R2 (S2 – t) = S2 t

R =± (S2t/s2-t) A1 (3mks)

1. A in 1 hr = 1/6

3 ½ x 1/6 = 7/12 B1

Work remaining 1 – 7/12

5/12

Time taken by B in 1 hr =5/12 ÷1/9 B1

= 5/12 x 9

= 45/12

3 ¾ hrs A1 (3mks)

1. A (i) 6.xR = 4.8 x 5

XR = 4.8 x 5 M1

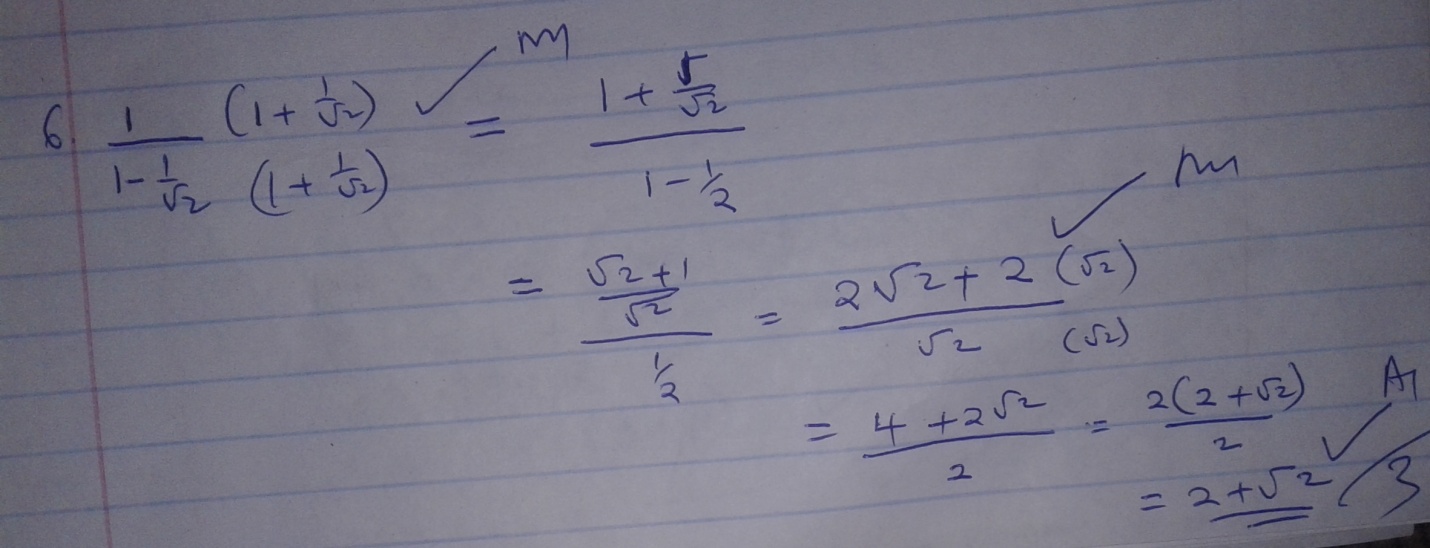
6

= 4cm A1

ii)(QT)2= 18 x 8 M1

QT = 144

QT = 12 A1 (2mks)



a) Q= B1 B1

1. Q1= B1
2. Q’(3,2) A1

8.



1. a) 1(15 (2x)o + 5(1)4(2x)1 + 10(1)3(2x)2 + 10(1)2(2x)3 M1

1 + 10x + 40x2 + 80x3 A1

b) 1.02 = 1+2x

0.02 = 2x

X=0.01

1 + 10(0.01) + 40(0.01)2 + 80 (0.01)3 M1

1.10408

1.104(3d.p) A1

10. A = 24,000 91 + 16/100x ¼ 3/2 x 4 M1

= 24,000 (1.04)6 M1

=30,367.66 A1(3mks)

11. 4(3i = 2j –k) = 12i = 8j – 3k

3(6i – 8j +3k) = 18i – 24j +9k

C=+= B1

C = (30)2 + (-16)2 + (6)2 ) B1

= 34.525

=35 A1 (3mks)

12. a = 2R

Sin A

a = 2R M1

Sin 60

R= a M1

2 sin 60

=5.2cm A1 (3mks)

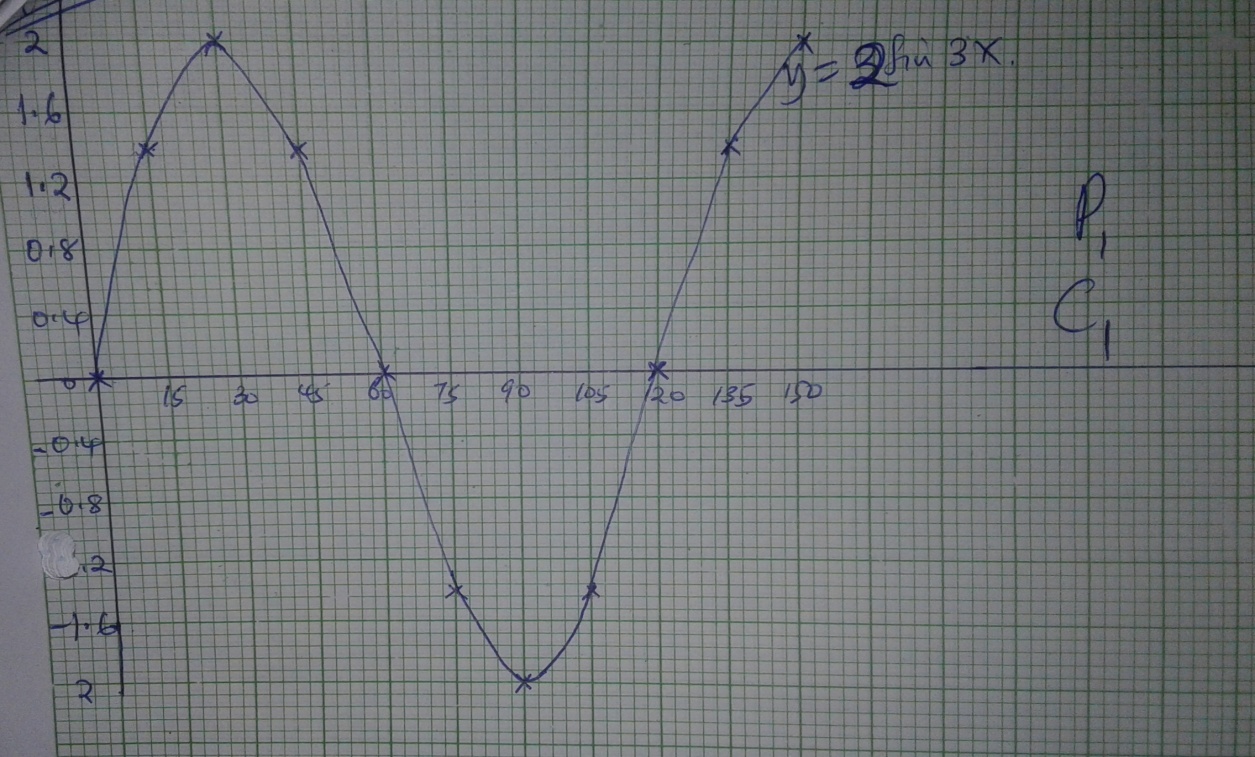
13. (x -0)2 + (y-2)2 = 21 + 0+4 M1

(x – 0)2 + (y -2)2 =25 = 52 M1

centre = (0, 2)

radius = 5 units A1

14. See the graph attached



15. b 2 = a x c

2

8 2 = 4 x c M1

2

16 = 4c

C = 4

K-3 = 4

K=7 A1

16.log (x + 5)= Log

X+ 5 = 4

X + 2 M1

(x+5)(x+2) = 4

X + 7x + 6 = 0 M1

X=-6 or -1 A1

17. a) i) Taxable income p.a in K£

12500 + 6550 = 19050 M1

19050 X 12

20 = 11,430 K£ A1

ii) Income tax per month

1980 x 2 = 3960

1980 x 3 5940 M1

2480 x 5 = 12400

1480 x 7 = 10360 M1

1960 x 9 = 17820

1530 x 10 = 15300

65720 M1

Tax per month = 5481 – 300 M1

= 5181 A1

b) total deductions

= 5181 +320 X 0.02 x 1950

=5881 M1

Net salary = 19050 – 5881

= Ksh 13169 A1

18. Sin = 10/2 ( 2 x 2 + (10 – 1) d ) M1

155 = 20 + 45d

= d = 3 A1

ii) Sin = n/2 ( 2 x 2 + 9n-1) d = 392 M1

n/2 (4 + 3n -3) 392 M1

3n2 + n -783 = 0

N=16 A1

B(i) a + 2d, a=4d, a = 7d M1

R = a + 4d = a = 7d

A +2d a + 4d

(a +12) (a+12) = (a =21) M1

18 =3a

A=6 A1

ii) S= a(rn – 1)

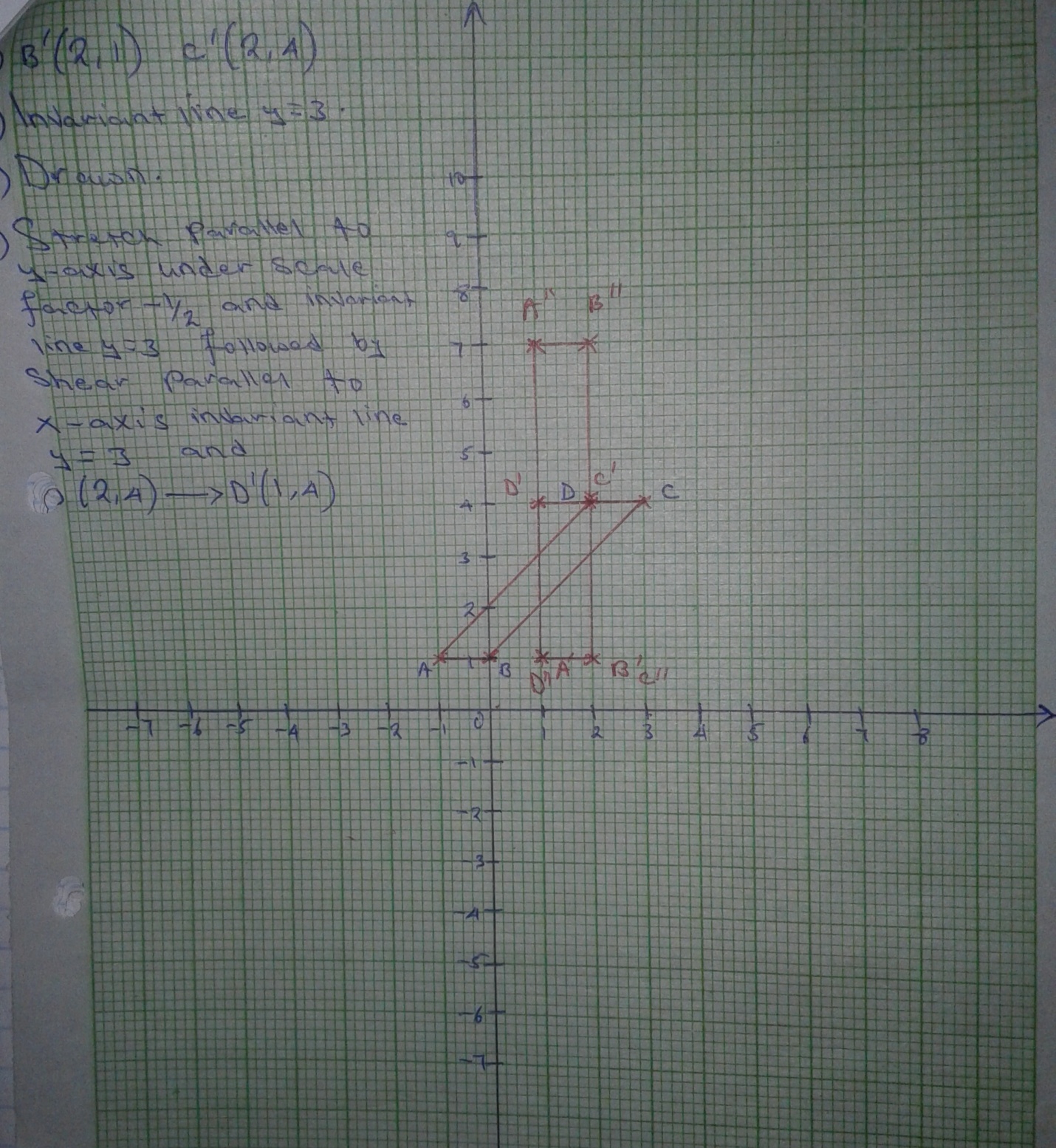
r – 1

= 6(2 11– 1) M1

2

=6141 A1

19



20. a) i) x -5 M1

ii) 4x -10 A1

b(i) young = X + 15

Elder = X + 20

Parent 4X + 10 M1

(x+15) (x +20) = 15(4x +10) M1

X 2+ 35x – 60x + 150 = 0 M1

X2 -25 + 150 = 0

Elder child 15 years or 10 years A1

ii) parent

(4x15)-10 = 50 years M1

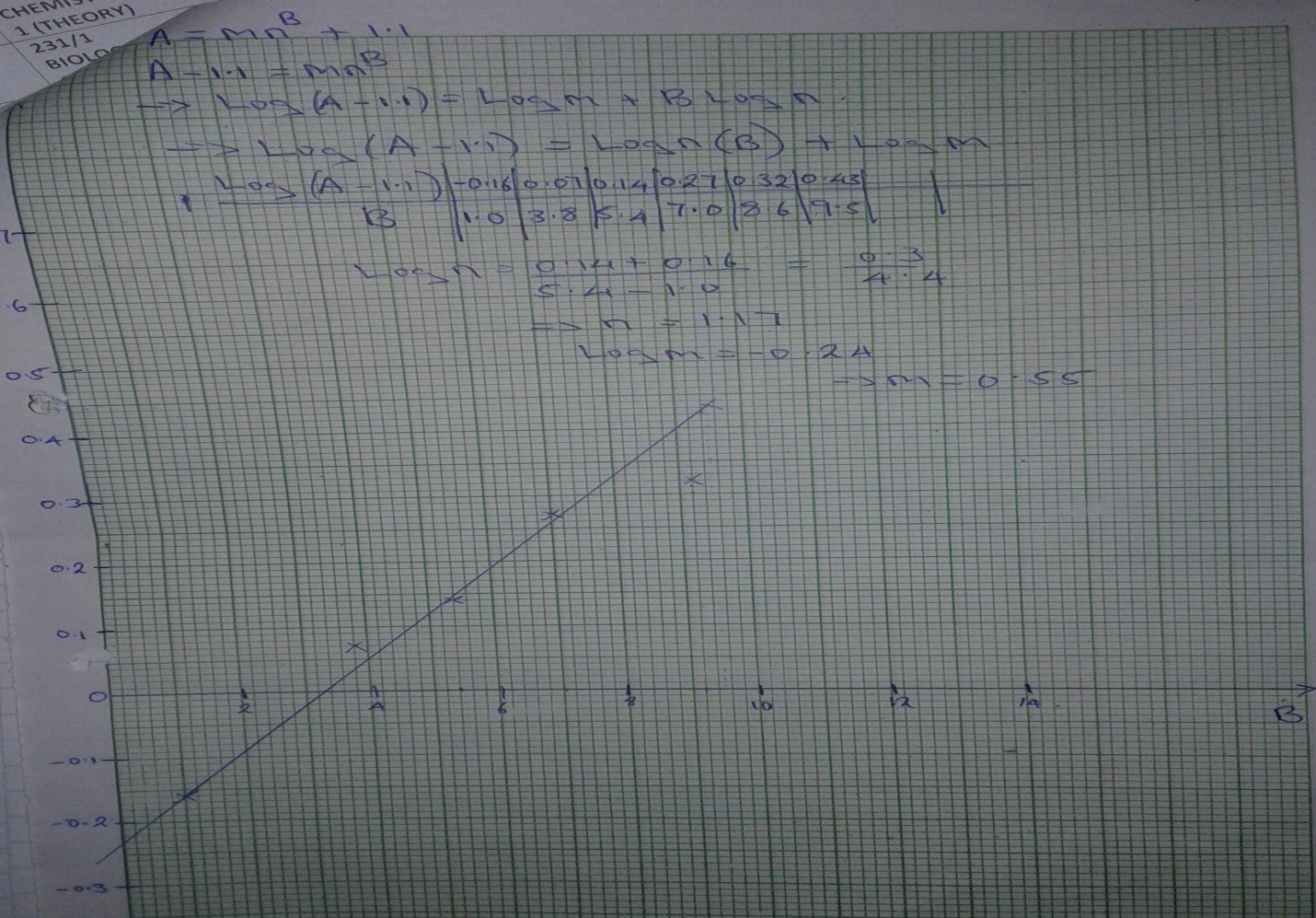
(4x10) – 10 = 30 years A1

iii) ages of younger child

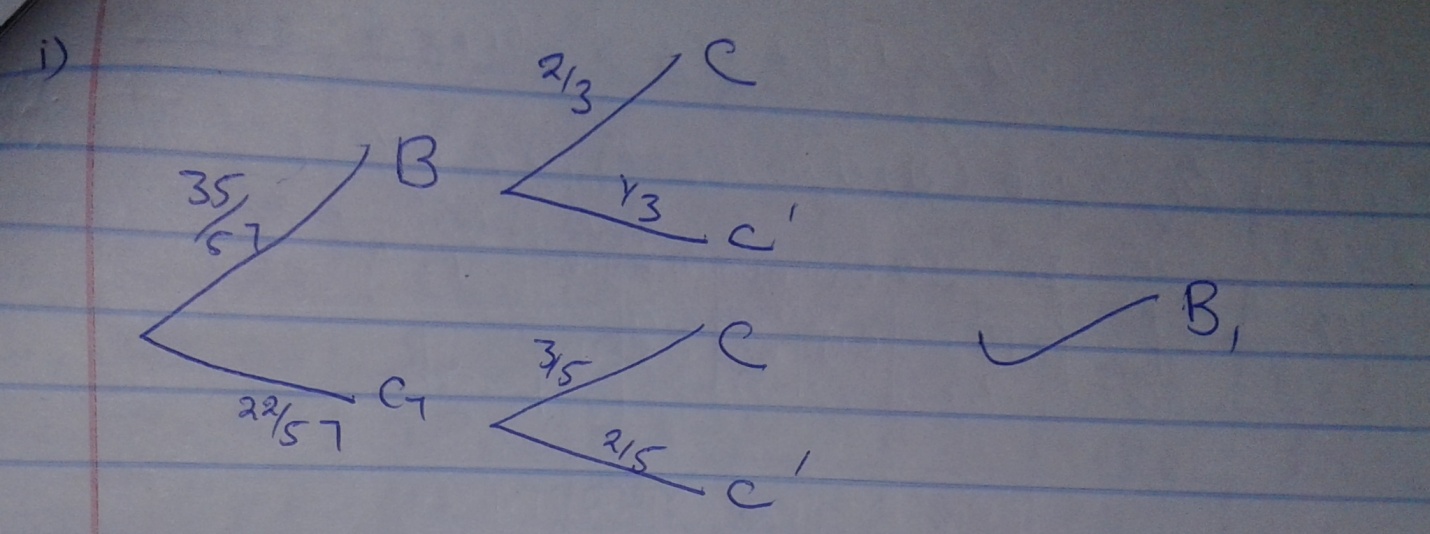
15 + 15 = 30 years M1

15+ 10 = 25 years A1

22.



21



P(BC) = 35 /57 x 2/3 = 70/171 B1

ii) P(BC) or P(C C)

35/75 x 2/3 + 22/57 x 3/5 B1

70/171+ 66/285 B1

=1096/1710 A1

b) P(BC’) on P (C, C’)

35/57x 1/3 and 22/57 x 2/5 B1

35/171x 44/285 B1

1540/48735 B1

=308/9747 A1

23.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Marks | Frequency | C.f | x | d | fd | Fd2 |
| 1 – 10 | 5 | 5 | 5.5 | -50 | -250 | 12500 |
| 11 – 20 | 12 | 17 | 15.5 | -40 | -480 | 19200 |
| 21-30 | 20 | 37 | 25.5 | -30 | -600- | 18000 |
| 31 -40 | 44 | 81 | 35.5 | -20 | -880 | 17600 |
| 41 – 50 | 68 | 149 | 45.5 | -10 | -680 | 6800 |
| 51 – 60 | 42 | 191 | 55.5 | 0 | 0 | 0 |
| 61 – 70 | 24 | 215 | 65.5 | 10 | 240 | 2400 |
| 71 -80 | 15 | 230 | 75.5 | 20 | 300 | 6000 |
| 81 – 90 | 12 | 242 | 85.5 | 30 | 360 | 10800 |
| 91 - 100 | 8 | 250 | 95.5 | 40 | 320 | 12800 |

1. median = ½ x 250 = 125

L + (n –c) = 40.5 +(125 – 81 10

F

= 46.97

B9i) X = A £fd M1

F

= 55.5 + - 1670 = 48.82 M1 A1

250

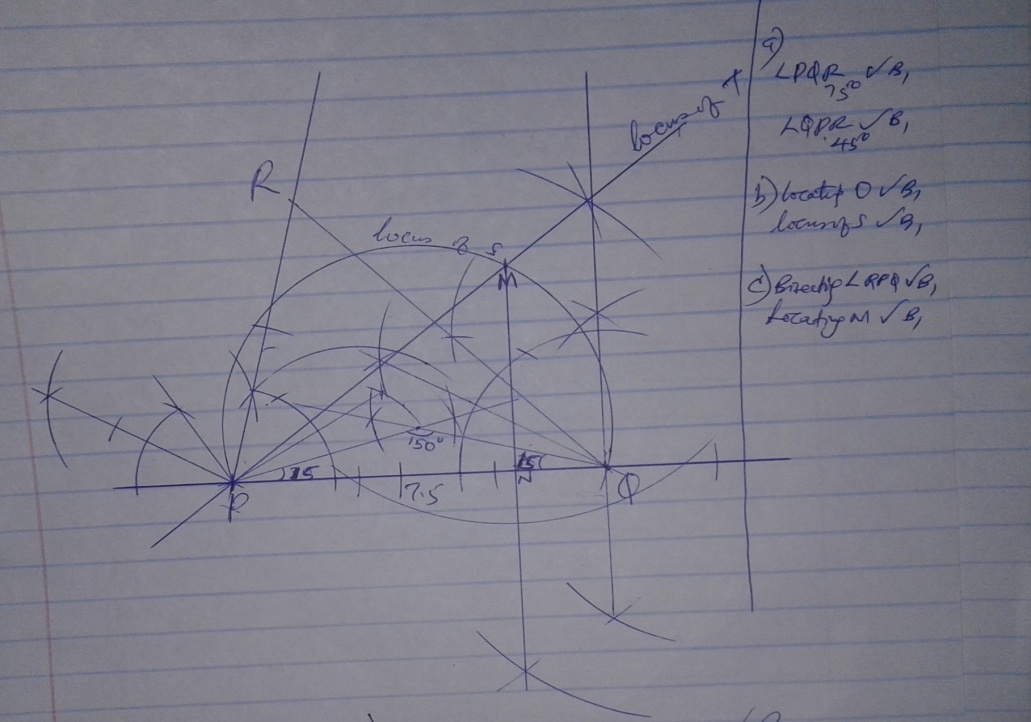
ii) s=2

=106100 – (-1670/250)2

250

S= 19.48

24.



d)MN=4.3 ± 0.1 B1

Area of PMQ= ½ X 7.5 x 4.3 M1

=16.125 A1