3KNT FRATERNITY FORM FOUR

MATHEMATICS

121/1

PAPER 1

TERM TWO 2017

MARKING SCHEME.

1.-8+(-4)+8÷(-2)

-6+(-2)+(-1)

-8+(-4)(-4)

-6-2-1 M1

-12-4 M1

9

-16=16 =1 A1

9 9

2.Numerator (2x+3y)(2x-3y) M1

Denominator 2-2xy-3xy+3

2x(x-y)-3y(x-y)

=(2x+3y)2x-3y) m1

(2x-3y)(x-y)

= 2x+3y

x-y A1

B1 –line PQ

B1 – 4 subdivisions of PQ

B1 – location of M

3.

P M Q

4.Gradient AB =6-4 = M1

5-1

Gradient PQ :x =-1

=-2 Q(x,y) M1

y-2=-2

x-3 1

y-2=-2x+6

y=-2x+8

or

y+2x=8 A1

5. Vol=1.05x1000=125 M1

8.4

Length=125=25cm A1

0.5

6.105$=110jy

?= 3850000

3850000x1=35000 us $ M1

110

1 us $ = 90 ksh

35000=? =90x35000=3,150,000 M1

Duty paid =3150000x20

100

= Ksh 630000 A1

7. <CDE=180-64= B1

<CBE= (AH<) B1

<ABE=64

<BE A=180(76+64)=400 B1

8. Tan 23.61=

H= x tan 23.61 M1

Tan 35=h=(x+6) Tan 35

xTan 23.61=(x-6)tan 35 M1

x tan 23.61=x tan 35-6 tan 35

O 2631x=-4.210

X=16 M1

H=16 tan 23.61=6.994

7.0 cm A 1

9. X=-

=

=

Tan A= /

5

2

5 A1

10. (6-4)90=720 (sum of interior angles) M1

2X+x+x+40+110+130+160=720 M1

3X=720-440=280

X=280x2=80

7

X=40(smallest) A1

11.(1)+(x)=-(1) M1

(2) (y)=(2)

1+ x=-1

X=-2≥

2+y=2

Y=0 M1 (for values of x and y)

(a)+(2)=(-3) M1

(b) (0) (-3)

a-2=3;a=-1

b=-3

therefore the coordinates of B are

(-1,-3) A1

12. X≤0 B1

Y≥2 B2

Y≤-x+2 B1

13.

D C

A B

14). 4.5 litres= 4.5x1000

9=9x1000l=9000x1000

VSF=4.5X1000=

9X1000000

LSF=

Height=90X12.6=1134cm.

15.Total hours 24x3+12=84 hrs B1

In 1 hr =15 sec(cat)

84 hrs=?

=1260 sec

=21 min B1

1745

21

1806 hrs

6.06 pm B1

16.

|  |  |  |
| --- | --- | --- |
| X | 4 | 8 |
| Y | 26 | 138 |

B1

W=10=2 units

5

(240+2(6+26+70+138) M1

240+480

=720 A1

17.a

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| X | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| Y | -14 | -6 | 0 | -4 | 6 | 6 | 4 | 0 | -6 | -14 |

B2

Check the graph

Scale B1

Plotting B1

Curve B1

B(i)

|  |  |  |
| --- | --- | --- |
| X | 0 | 1 |
| Y | 2 | 0 |

Check the line B1

(ii) (-1,4) and (4,-6) B1 for both

SECTION II

18.After 2 hrs

Boat P 750x2=150 km

Boat Q 900x2=1800km

Scale 1cm rep 300km

1500=5cm 1800=6cm

2 300

QP=10.6±0.1 M1

10.6x300=3180km A1

Bearing of Q from p=225

Bearing of P from Q=45

19. aprofit for taxes and insurance

40 x75

100 100 M1

Amount showed=100-(25+30)x225000

100

45x225000=101250 M1

100

Amount Cherop received more than Asha;

Ratio of contribution 60000:8500:1050000

=12:17:21 M1

21.12 x101250=18225 A1

50

(b)Profit during 2nd year

2250000x=2500000 M1

Nangilas new ratio

M1

Nangilas new share of profit.

x112500=45000 A1

20.(a) L==

A=3.142 x6x18.97+3.142x6x6 M1

=35.7.62244+113.112 M1

=470.7344

=470.73 A1

(b)V=AH=x113.112x18 M1

=678.672

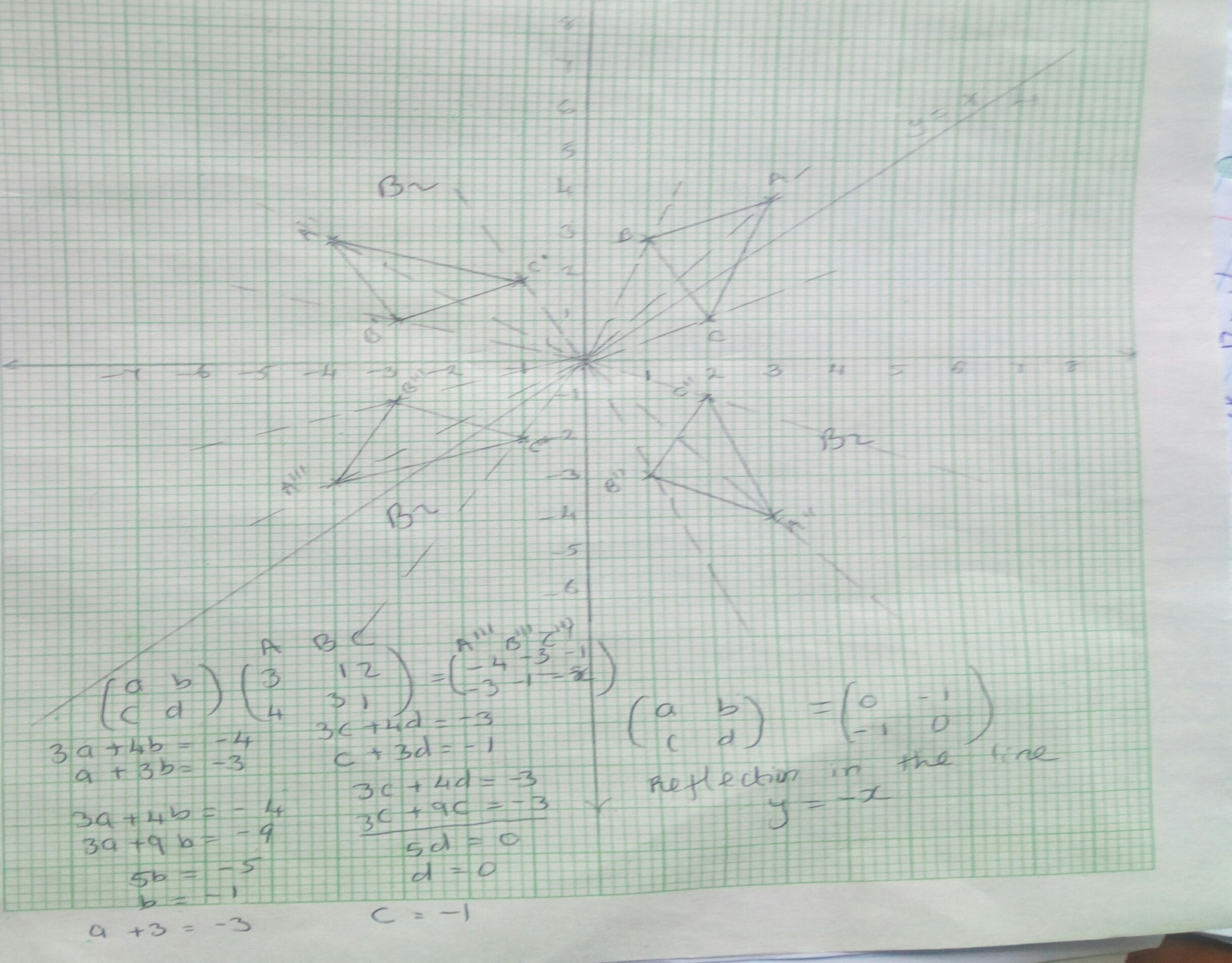
(c)x6=3.667 M1

V=ii(7)(=6(3.667)+3.667) M1

ii(71.448889) M1

=523.82 A1

21.



3a+4b=-4 3c+4d=-3

A+3b=-3 c+3d=-1

3a+4b=-4 3c+4d=-3

3a+9b=-9 3c+9c=-3

5b=-5 5d=0

B=-1 d=0

A+3=-3 c=-1

Reflection in the line

Y=-x

22. (a)Max speed (the length)

x(350+850)h=1500 M1

H=15000x2=25m/s M1

1200

In km/h=x3600=90km/h A1

(b)Accelelator=

==m/s

(c) Distance =speed x time

M1

X=150x25

300

=125m/sec

Distance =x150x125=937.5 A1

(d)Distance=7500m

1st part ½ x200x25=2500m

2nd part tx25=25t

2500m+25t=7500m M1

25t= 7500-2500

T= =200sec M1

Total time=200+200

=400sec A1

23.class frequency cf

40-43 5 5

44-47 4 9

48-51 5 14

52-55 3 17

56-59 6 23

60-63 2 25

(b)median=25/2 =12.5

47.5+4/5 x4=50.7 kg

(c) Axes well labeled

Bars draws with uniform width

Class line used as boundaries.

24. sin==0.3200

=18.66

ThereforePQ=2x18.66=37.33 B1

sin==0.400

25.58

Therefore PQ=2x25.58=47.16 B1

Area of sector py Q=37.33 x3.142x12.52

360

=50.19

Area of O1 PQ=1/2 x12.5cm x 12.5cm sin 37.33

=47.38 M1

Area of segment PY QP=50.91-47.38

=3.53 M1

Area of sector OPxQ=47.16x3.142x

360

=41.16 M1

Area of D =1/2 xxsin 47.16=36.66

Area of segment=41.16-36.66

=4.5 M1

Shaded area=3.53+4.5

=8.03 A1

Area of sector=41.16-8.0=33.13 A1.