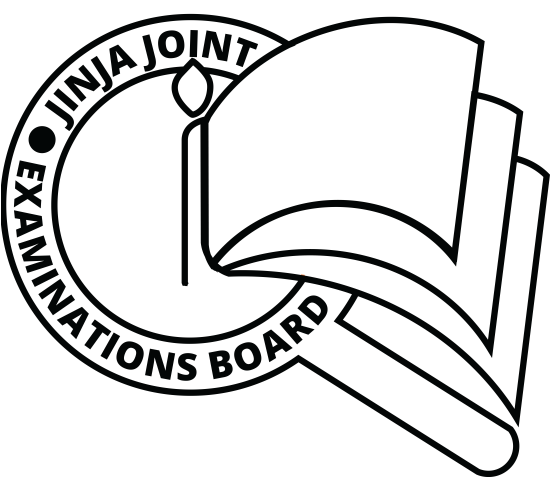
****JINJA JOINT EXAMINATIONS BOARD**

**MOCK EXAMINATIONS 2022**

**P425/1 MATHEMATICS**

**MARKING GUIDE**

**M1**

**A1**

**M1**

**M1**

= 1.26 **A1**

**05**

1. B1

=

=

=

B1

and M1

and

A1

05



Let

**M1**

**M1**

Let

**B1**

**M1**

**A1**

**05**

1. From

**B1**

Using

**M1**

**B1**

At point ( 2, 3 )

**M1**

**A1**

**05**

1. and the vectors on the plane are

and  **B1**

If is normal to plane, then

and

**M1**

**M1**

is a normal vector the plane. **B1**

Equation of the plane is

**A1**

Or

**05**



**B1**

**B1**

**M1**

discard

**A1**

And

**A1**

**05**



Differentiating the equation with respect to ,

**M1**

**B1**

**M1**

**M1**

**B1**

**05**

1. Gradient of line is **B1**

For

**B1**

Let be the point contact of the required tangent.

**M1**

Hence equation of tangent is

**M1**

**A1**

**05**

1. (a) let be the square root of

**M1**

Reals:

**B1**

**B1**

**M1**

**M1**

but since

so

and

**A1 A1**

The square roots are and

(b) If

**M1**

**B1**

Locus of C1 is a circle centre (3, 0 ) and radius 3. **B1**

And Arg is a half line starting at point (1, 0) on the real

axis making an angle of **B1**

1m

B1 C2

B1

(1 , 0) (3, 0) Re

C1

A1

12

1. (a)

Let 4

**M1**

= **M1**

= **B1**

**M1**

**A1**

(b)

**B1** **M1**

**M1**

**M1**

**M1**

**B1**

**12**

M1 M1



**M1**

**B1**

For

**M1**

**M1**

**B1**

**M1**

**B1**

Discard

**M1 A1**

**12**

1. (a) direction vector for

Direction vector of x-axis

**M1 M1**

**A1**

(b) (i) for

At A : **M1**

Taking coefficient of **j**;

**B1**

For

**A1**

For

**A1**

(b) (ii)

L

**AN B1**

**AN . b =** 0

**M1**

**B1**

**M1**

= 9 units **A1**

**12**



M

S(2,0)

Q

(a) solving simultaneously equation of normal and curve.

**M1**

**B1**

Let be the roots of the quadratic equation;

**M1**

From

**B1**

**M1**

**M1**

**B1**

(c) grad of normal is

equation of line SM;

**B1**

But equation of tangent at P is

At 1 = 2

**B1**

**B1**

But 5

**M1**

**B1**

**12**

1. (a) **B1**

1. **M1**

**A1**



**M1**

**A1**

1. If

**B1**

(b)

dividing the equation **M1**

**M1**

But

**B1**

From

**A1**

the prices of other items are 1200/= and shs 2400/= **A1**

**12**

1. (a) Given the equation

Differentiating both sides with respect to

**M1 M1**

**B1**

At point

Gradient, **M1**

**A1**

(b)

10 10 – 2

16

**M1**

**M1**

**M1**

**M1**

The length of the side of the square must be less than half the side of the

rectangle

is not a possible solution.

For maximum value,

**B1**

**A1**

**12**

1. (a) y

**B1**

Let

**M1**

**B1**

When

**B1**

**A1**

(b) (i)

**A1**

(ii)

**M1**

**B1**

At

**B1**

And

**B1**

**A1**

When

(iii) **M1**

**A1**

**12**

**E N D**