**BRAC University**

**MAT-215**

**Practice Sheet # 4**

1. Evaluate  along

(a) the curve 

(b) the straight line joining and 

(c) the straight lines from to  and then from  to

(d) the straight lines from  to  and then from  to .

2. Evaluate  around the ellipse *C* defined by ,

 if *C* is described in a counterclockwise direction.

3. Evaluate  along

(a) the parabola  from  to 

(b) the straight lines from  to  and then from  to 

(c) the straight line from  to .

4. Evaluate  around the square with vertices at .

5. Evaluate 

(a) along the circle  from  to  in a counter clockwise direction.

(b) the straight line from  to  and then from  to.

6. Evaluate 

(a) along the straight line joining  and 

(b) along the parabola .

7. Evaluate  around the circles (a)  and (b) .

8. Evaluate  around (a) the circle  (b) the circle .

9. Evaluate  around the circle .

10. (a) Show that the line integral  is independent of path where C is

the curve given by .

(b) Hence or otherwise evaluate the line integral in Question (a) along the curve C

joining the points (3,4) and (4,-3).

11. (a) Show that the line integral is independent of path where C is

the curve given by 

(b) Hence or otherwise evaluate the line integral in Question (a) along the curve C

joining the points (1,1) and (2,3).