**Calculator Free**

**Anti-Differentiation Techniques**

Time: 45 minutes

Total Marks: 45

Your Score: / 45



**Question One: [2, 2, 2, 3, 3, 3, 3, 3 = 21 marks] CF**

Anti-differentiate each of the following, showing all working. Leave all answers with positive indices.

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 

**Question Two: [3, 3, 3 = 9 marks] CF**

Calculate the following integrals, showing all working.

1. 
2. 
3. 

**Question Three: [3 marks] CF**

The derivative of  is given by  . Given that  , find an expression for  .

**Question Four: [6 marks] CF**

The gradient function of  is given by  . Determine the values of *a* and *b* if  and  .

**Question Five: [1, 2, 3 = 6 marks] CF**

Given that  and  , determine:

1. 
2. 
3. 

**SOLUTIONS**

**Calculator Free**

**Anti-Differentiation Techniques**

Time: 45 minutes

Total Marks: 45

Your Score: / 45



**Question One: [2, 2, 2, 3, 3, 3, 3, 3 = 21 marks] CF**

Anti-differentiate each of the following, showing all working. Leave all answers with positive indices.

1. 



1. 



1. 



1. 



1. 



1. 



1. 



1. 



**Question Two: [3, 3, 3 = 9 marks] CF**

Calculate the following integrals, showing all working.

1. 



1. 



1. 



**Question Three: [3 marks] CF**

The derivative of  is given by  . Given that  , find an expression for  .



**Question Four: [6 marks] CF**

The gradient function of  is given by  . Determine the values of *a* and *b* if  and  .



**Question Five: [1, 2, 3 = 6 marks] CF**

Given that  and  , determine:

1. 



1. 



1. 

