**Calculator Free**

**Logarithm Laws and Solving Equations**

Time: 45 minutes

Total Marks: 45

Your Score: / 45

**Question One: [2, 2, 2, 2 = 8 marks] CF**

Express each of the following as a single logarithm:

1. 
2. 
3. 
4. 

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

Evaluate each of the following showing full working:

1. 
2. 
3. 

**Question Three: [1, 3 = 4 marks] CF**

If , where  is positive, express each of the following in terms of .

1. 
2. 

**Question Four: [2, 3, 3, 3, 3, 3, 4, 3 = 24 marks] CF**

Solve each of the following equations, showing all working.

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

**SOLUTIONS**

**Calculator Free**

**Logarithm Laws and Solving Equations**

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1. 



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Solve each of the following equations, showing all working.

1. 



1. 



1. 



1. 



1. 



1. 



1. 



1. 

