WORKSHEET

Name: ..... Class: .....

Date: .....

MARK ____ / 18

Answer all questions. Show all your working — marks are awarded for method as well as the final answer.

1 A rectangle has a perimeter of 40 m. Determine its maximum possible area. **(4)**

2 The height of a ball is $s(t) = 20t - 5t^2$. Determine its velocity after 1 second. **(2)**

3 For the same ball, determine when it reaches its maximum height. **(2)**

4 For the same ball, determine its maximum height. **(2)**

5 For the same ball, determine its velocity when it strikes the ground. (3)

6 Determine the acceleration of the ball. (2)

7 Why must you use the constraint before differentiating? (2)

8 What does a negative velocity tell you? (1)

TOTAL: 18 marks

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