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| **Topic 5: Calculus** | **Areas between a curve and the x-axis** |
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| The following diagram gives some of the graph . The shaded region *A* is bounded by the *x*-axis, *y*-axis, and the graph of *g*.  |
| 1. Write down the integral for the area of region A.

(b) Find the area of region A.The three points Q(2,0), R(4, 8 ), and S(c, 0) create the triangle below. **(This question continues on the following page)**(c) Find the value of c, the x-coordinate of *S*, such that the area of  the triangle is equivalent to the area of region *A* in part (b). | (2 marks) (1 mark)(2 marks) |
| Mark scheme:1.

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| **Note:** Award **A1** for having the correct limits x = 0 and x = 2. Award  **A1** for an integral of *f(x)*. |

1. 14.7 (accept , 14.6666…)

  (c)  (accept )  | (A1)(A1)(A1)(M1)(A1) |