10

The diagram shows the curve $y = \sqrt{(1 + 2x)}$ meeting the x-axis at A and the y-axis at B. The y-coordinate of the point C on the curve is 3.

  (i) Find the coordinates of B and C. [2]

  (ii) Find the equation of the normal to the curve at C. [4]

  (iii) Find the volume obtained when the shaded region is rotated through $360°$ about the **y-axis**. [5]