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3. The line l_1 has equation $3x + 5y - 7 = 0$

(a) Find the gradient of l_1

(2)

The line l_2 is perpendicular to l_1 and passes through the point $(6, -2)$.

(b) Find the equation of l_2 in the form $y = mx + c$, where m and c are constants.

(3)

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Question 3 continued

Q3

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4.

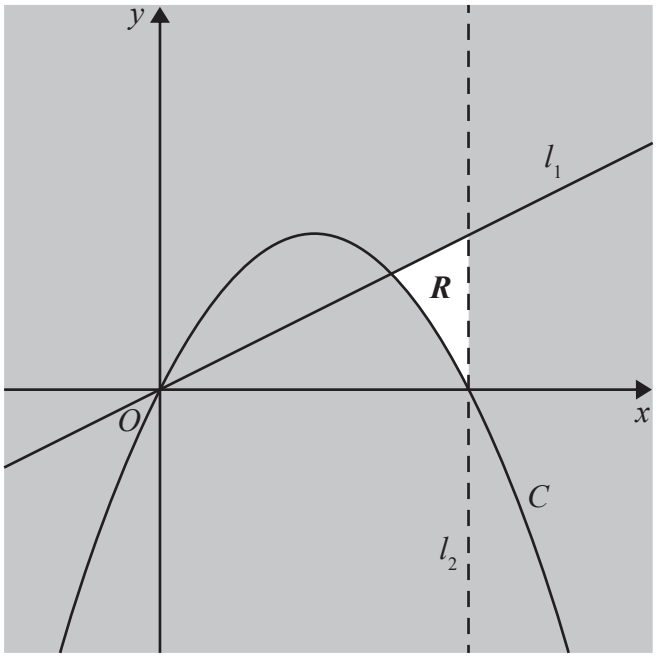


Figure 1

Figure 1 shows a line l_1 with equation $2y = x$ and a curve C with equation $y = 2x - \frac{1}{8}x^2$

The region R, shown unshaded in Figure 1, is bounded by the line l_1, the curve C and a line l_2

Given that l_2 is parallel to the y-axis and passes through the intercept of C with the positive x-axis, identify the inequalities that define R.

(3)

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