

5.

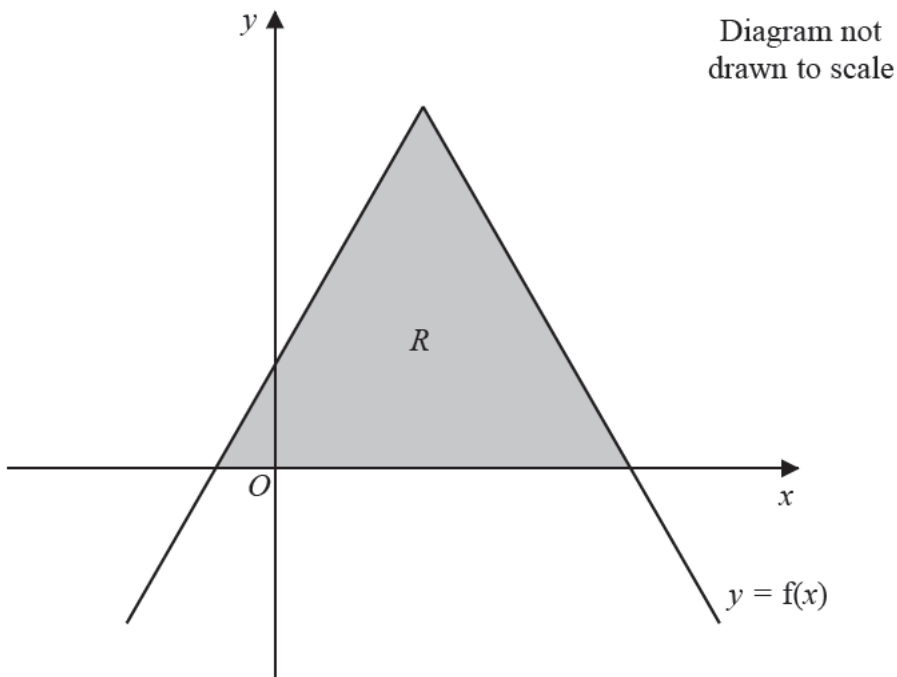
**Figure 2**

Figure 2 shows part of a graph with equation $y = f(x)$, where

$$f(x) = 7 - |3x - 5| \quad x \in \mathbb{R}$$

The finite region R , shown shaded in Figure 2, is bounded by the graph with equation $y = f(x)$ and the x -axis.

(a) Find the area of R , giving your answer in simplest form.

(4)

The equation

$$7 - |3x - 5| = k$$

where k is a constant, has two distinct real solutions.

(b) Write down the range of possible values for k .

(1)