

(8 marks)

A graph of $y = f(x)$ is shown in Figure 8, along with two shaded regions bounded by $f(x)$ and the x -axis. Each region has an area of 2 square units. The regions are also identically shaped and symmetric about a vertical line through each of the stationary points.

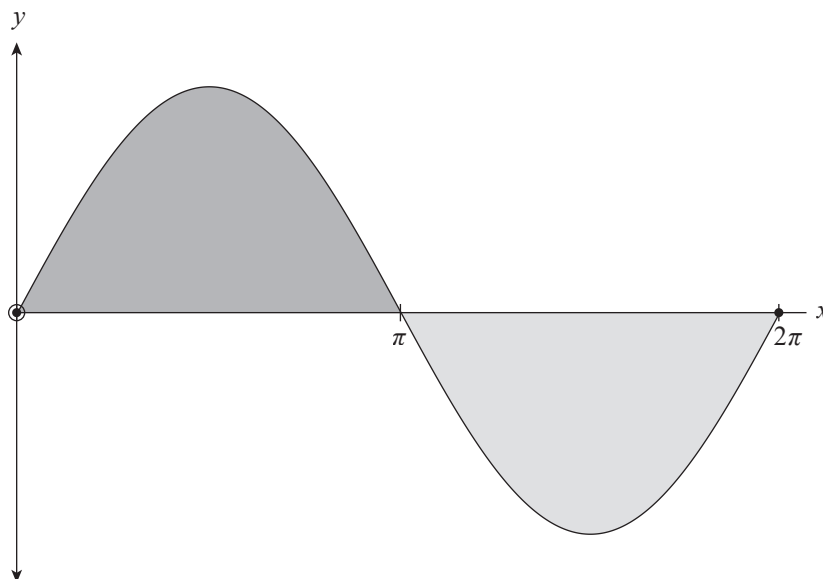


Figure 8

- (a) State the value of $\int_0^{2\pi} f(x) \, dx$.

(1 mark)

- (b) State the value of a that maximises the value of $\int_0^a f(x) \, dx$ for $0 \leq a \leq 2\pi$.

(1 mark)

Question 9 continues on page 8

