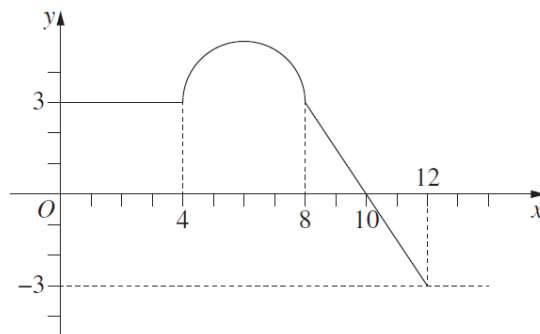




- 20 MA 7** The diagram shows the graph $y = f(x)$, which is made up of line segments and a semicircle.

What is the value of $\int_0^{12} f(x) dx$?

- A. $24 + 2\pi$ B. $24 + 4\pi$
C. $30 + 2\pi$ D. $30 + 4\pi$



1

A

Consider the areas:

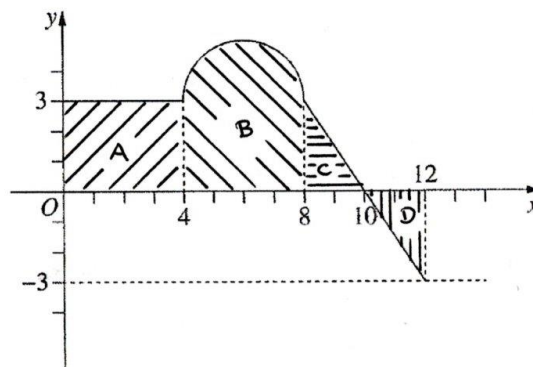
$$\text{Area } A = 4 \times 3 = 12$$

$$\text{Area } B = 4 \times 3 + \frac{1}{2} \times \pi \times 2^2 = 12 + 2\pi$$

$$\text{Area } C = \frac{1}{2} \times 2 \times 3 = 3$$

$$\text{Area } D = \frac{1}{2} \times 2 \times 3 = 3$$

$$\begin{aligned} \int_0^{12} f(x) dx &= 12 + 12 + 2\pi + 3 - 3 \\ &= 24 + 2\pi \end{aligned}$$



State Mean:
0.48/1

* These solutions have been provided by [projectmaths](http://projectmaths.com.au) and are not supplied or endorsed by NESA.

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