MORE AREAS

2 Find the area of the region bounded by the parabola $y = x^2 + 2$, the x-axis and the lines $x = -1$ and $x = 2$.

4 Calculate the area of the region bounded by the curve $y = 4 - x^2$ and the x-axis.

5 Which of these integrals will give the area of the region bounded by the curve $y = 16 - x^4$ and the x-axis? Indicate whether each answer is correct or incorrect.

(a) $\int_{-2}^{2}\left(16 - x^4\right)dx$ (b) $\int_{-4}^{4}\left(16 - x^4\right)dx$ (c) $2\int_{0}^{2}\left(16 - x^4\right)dx$ (d) $\left|\int_{-2}^{2}\left(16 - x^4\right)dx\right|$

6 Calculate the area of the region bounded by the curve $y = -x^3$, the x-axis and the ordinates $x = -3$ and $x = 3$.

7 The value of the definite integral $\int_{-4}^{4} x^3 \, dx$ is: **A**   −128   **B**   0   **C**   64   **D**   128

8 Calculate the area of the region bounded by the graph of $f(x) = (x - 2)^3$, the x-axis, $x = 2$ and $x = 3$.

9 Find a positive number k such that the area of the region bounded by the graph of $f(x) = kx(2 - x)^2$ and the x-axis is equal to 1 unit^2.

10 For the graph of $f(x) = (x + 1)(x - 1)^2$, calculate:

(a) the area bounded by the curve, the x-axis, $x = 0$ and $x = 0.5$

(b) the area bounded by the curve and the x-axis

(c) the area to the right of the origin bounded by the curve and the coordinate axes.

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12 Find the area of the region bounded by the curve $y = x(x - 2)^2$ and the x-axis.

13 Calculate the area of the region bounded by the curve $y = (x + 1)(x - 1)(x - 3)$, the x-axis and the ordinates at $x = 0$ and $x = 2$.