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)
$$\int_{-2}^{2} (16 - x^4) dx$$

(b)
$$\int_{-1}^{4} (16 - x^4) dx$$

(c)
$$2\int_{0}^{2} (16-x^{4}) dx$$

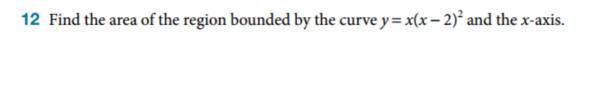
(a)
$$\int_{-2}^{2} (16-x^4) dx$$
 (b) $\int_{-4}^{4} (16-x^4) dx$ (c) $2\int_{0}^{2} (16-x^4) dx$ (d) $\left| \int_{-2}^{2} (16-x^4) dx \right|$

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 unit².

- **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.



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.