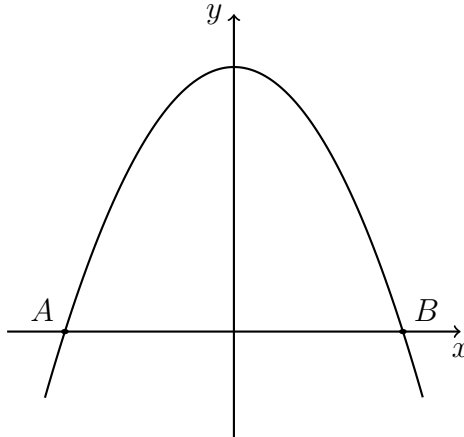


Name:

Do Now Quiz: Calculus & Trigonometry - with calculator

Pick one problem from each page.

1. *Medium* Let $f(x) = 6 - x^2$. Part of the graph of f is shown in the following diagram.

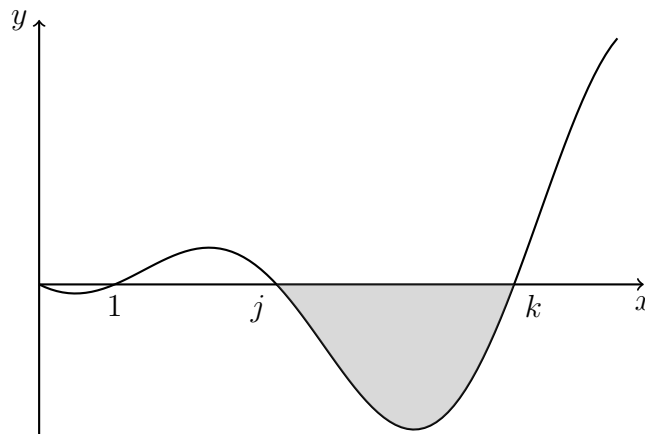


- (a) The graph crosses the x -axis at the points A and B .

Find the x -coordinate of A and of B . [3]

- (b) Find the area of the region enclosed by the graph of f and the x -axis. [3]

2. *Spicy* The graph of $y = (x - 1) \sin x$, for $0 \leq x \leq \frac{5\pi}{2}$, is shown below.



- (a) The graph has x -intercepts at $0, 1, j$, and k . Find j and k . [2]

- (b) The shaded region is rotated 360° about the x -axis. Let V be the volume of the solid formed. Write down an expression for V . [3]

- (c) Find V . [2]

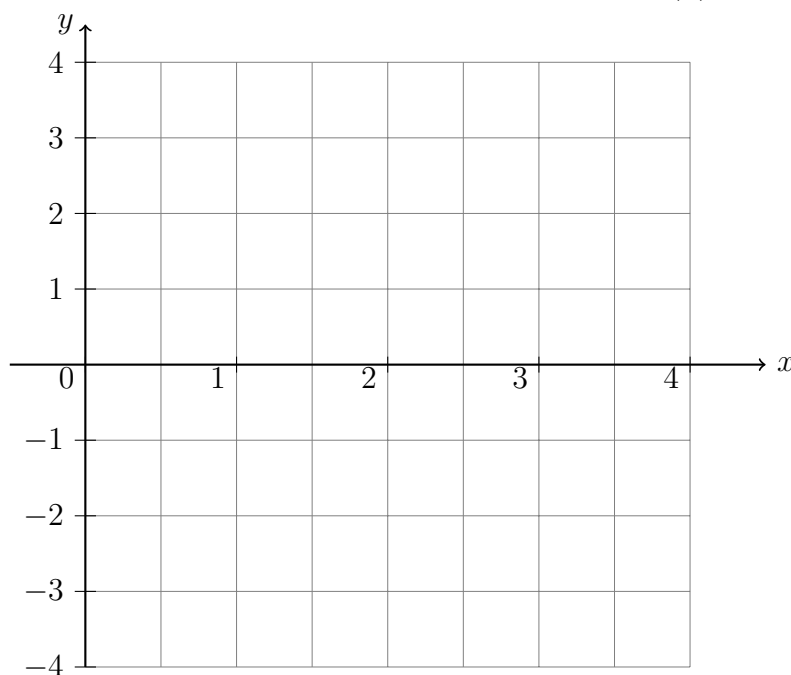
Name:

3. *Medium* Let $f(x) = 3 \sin(\pi x)$.

(a) Write down the amplitude of f . [1]

(b) Find the period of f . [2]

(c) On the following grid, sketch the graph of $y = f(x)$, for $0 \leq x \leq 3$.



[3]

4. *Spicy* Let $f(x) = \sin(x + \frac{\pi}{4}) + k$. The graph of f passes through the point $(\frac{\pi}{4}, 6)$.

(a) Find the value of k . [2]

(b) Find the minimum value of $f(x)$. [2]

(c) Let $g(x) = \sin x$. The graph of g is translated to the graph of f
by the vector $\begin{pmatrix} p \\ q \end{pmatrix}$.

Write down the value of p and q .

[2]