1. If $f$ and $g$ are continuous functions with $f(3) = 6$ and $\lim_{x \to 3} \left[ \frac{7g(x)}{f(x)} \right] = 14$, find $g(3)$.

2. Find all values of $c$ such that the function

$$f(x) = \begin{cases} 
\frac{x^2 - 4}{x - 2} & \text{if } x < 2 \\
(c^2 - c)x - 8 & \text{if } x \geq 2
\end{cases}$$

is continuous everywhere.

3. Give three examples of types of discontinuity. You don’t need to name them, but you should be able to draw them.