

**Some limit problems**

Evaluate each of the following limits. For each problem, be sure to understand which symbol represents inputs for the function. It is implied that any other symbol represents a constant.

$$1. \lim_{x \rightarrow t} \frac{x^2 - t^2}{x - t}$$

$$2. \lim_{p \rightarrow q} \frac{p^3 - q^3}{p - q}$$

$$3. \lim_{h \rightarrow 0} \frac{\frac{1}{x+h} - \frac{1}{x}}{h}$$

$$4. \lim_{x \rightarrow 0} \frac{\sqrt{a+x} - \sqrt{a}}{x}$$

$$5. \lim_{h \rightarrow 0} \frac{\sin(x+h) - \sin x}{h}$$