**Problem**

Evaluate the limit when x approaches 0:

**Solution**

As *x* approaches 0, both the numerator and the denominator approach 0. This is an indeterminate form of ​. We can not simplify the fraction and if we take it by parts you’ll be left with , which goes to infinity as x approaches 0. However, we can apply L'Hôpital's Rule to evaluate this limit.

First, we'll take the derivatives of the numerator and the denominator separately:

Now, we'll rewrite the limit using these derivatives:

Hence the limit goes to 4 when x approaches 0.

The answer is **4**.

**Answer: 4**