Key

Math 4

U3 L3 I1

Name_____

Date_____

Learn Check

1. A utility company burns coal to produce electricity. The cost C (in dollars) of removing p percent of the air pollutants in the stack emission of the utility company is given by the equation

$$C(p) = \frac{80000p}{80-p}$$

a. Determine the domain of the expression in the context of the problem.

$\{p: 0 \leq p < 80\}$

b. Can all the pollutants in the stack emission be removed? Explain.

No. If $p > 80$, C is negative & that does not make any sense.

c. Explain mathematically why the company claims that it will never have enough money to remove 80% of the pollutants from the stack emission.

As p approaches 80, the cost will be increasing without bound (to huge #s).

In other words,

$\lim_{p \to 80^-} C(p) = \infty$

↓

from left

since domain is #s smaller than 80.