

Math 252 Homework 1 Written Part

Name: KEY

Write legibly. Show your work. Graph neatly. Use a ruler for all straight lines.

For the following limit forms, either give the answer or label it as indeterminate. Be ready to discuss/explain your answers next class.

Remembering that these are results of limits, it's smart to think:

0 = a number very close to zero that might be positive or negative, and that's getting closer to zero.

∞ = a very big positive number, that's getting infinitely bigger.

1 = a number very close to 1, that's getting closer to 1, but it might be less than 1 or greater than 1.

(1) $\frac{0}{0} = \text{indeterminate}$

(2) $\frac{\infty}{\infty} = \text{indeterminate}$

(3) $\frac{0}{\infty} = 0$

(4) $\frac{\infty}{0} = +\infty, -\infty, \text{ or may not exist}$

(5) $\infty + \infty = \infty$

(6) $\infty - \infty = \text{indeterminate}$

(7) $\infty \cdot \infty = \infty$

(8) $\infty \cdot 0 = \text{indeterminate}$

(9) $0^0 = \text{indeterminate}$

(10) $0^\infty = 0$

(11) $\infty^0 = \text{indeterminate}$

(12) $1^\infty = \text{indeterminate}$