

Name: _____

TC

Classwork 12

Announcement: Unit Quiz on Limits will be next Wednesday

Reminder: Problem set is due next Tuesday

1. Find $\lim_{x \rightarrow 3} \frac{3x^2 - 21x + 36}{x^2 - 9}$

2. Find $\lim_{x \rightarrow 0} \frac{4x^6 - 5x^3 + x^2}{2x^7 + 3x^5 - 4x^2}$

3. Find $\lim_{x \rightarrow \infty} \frac{4x^3 - 7}{2x^3}$

4. Find $\lim_{x \rightarrow 5} \frac{x - 5}{\sqrt{x^2 + 15x} - 10}$

5. Find $\lim_{x \rightarrow 2} \frac{\sin^2 x - 5x}{x - 2}$

6. Find each limit

a) $\lim_{x \rightarrow 0} \frac{4}{x^2}$

b) $\lim_{x \rightarrow \infty} \frac{4}{x^2}$

c) $\lim_{x \rightarrow 4} \frac{4}{x^2}$

d) $\lim_{x \rightarrow 4+} \frac{4x}{x-4}$

e) $\lim_{x \rightarrow 4} \frac{x^2 + 3x - 28}{x - 4}$

f) $\lim_{x \rightarrow 0} \frac{x}{x^2 - 3x}$

g) $\lim_{x \rightarrow 0} \frac{x^6 - x^4}{x^2}$

h) $\lim_{x \rightarrow 0} \frac{x^3 + x^2}{5x^6}$

i) $\lim_{x \rightarrow \infty} \frac{x^2 + 3x - 28}{x - 4}$

j) $\lim_{x \rightarrow \infty} \frac{x^6 - x^4}{x^2}$

k) $\lim_{x \rightarrow \infty} \frac{x^3 + x^2}{5x^6}$

7. “The Pizza Problem”

Find $\lim_{x \rightarrow 4} \frac{\sqrt{x^2 + 9} - 5}{\sqrt{x^2 - 7} - 3}$

Practice Problems

1. Write a limit problem where plugging in gives you $0 \div 0$ but the limit equals 1.
2. Write a limit problem where plugging in gives you $0 \div 0$ but the limit equals ∞ .
3. True or false: It is possible for ∞/∞ to give you 0.

4. Find $\lim_{x \rightarrow 0} \frac{x^3 + 7x^2 - 1/x}{4x^4 + 1/x^2}$

5. Find $\lim_{x \rightarrow \infty} 4x^2 - x^3$

6. Find $\lim_{x \rightarrow 2} \frac{\sqrt{x^2 + 6x} - 4}{x - 2}$