

Name: \_\_\_\_\_

TC

## Classwork 11

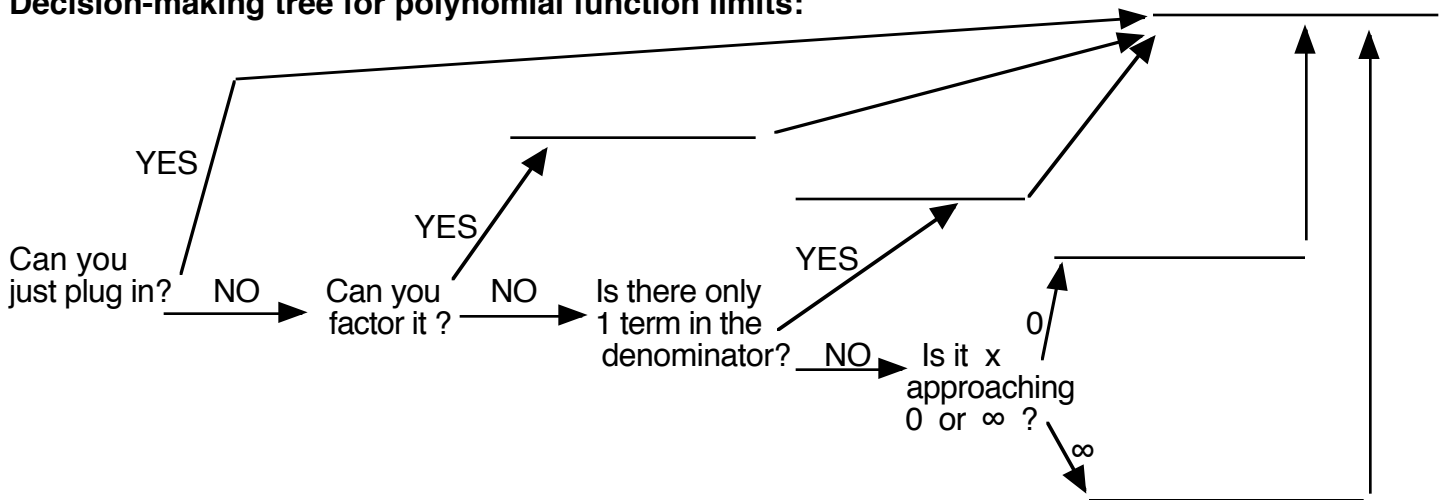
1. Find each limit.

a)  $\lim_{x \rightarrow 4} \frac{3x^2 - 48}{x^2 - 5x + 4}$

b)  $\lim_{x \rightarrow \infty} \frac{3x^2 - 48}{x^2 - 5x + 4}$

c)  $\lim_{x \rightarrow 0} \frac{3x^2 - 48}{x^2 - 5x + 4}$

Decision-making tree for polynomial function limits:



2. Find  $\lim_{x \rightarrow 9} \frac{x^2 - 81}{\sqrt{x} - 3}$

3. Write the complex conjugate of each complex number.

a)  $4 + 2i$

b)  $3 - 7i$

c)  $1 + .5i$

4. What could you multiply the following expression by in order to remove **all** square root signs?

$$4 - \sqrt{5}$$

5. Find  $\lim_{x \rightarrow 0} \frac{\sqrt{x^2 + 9} - 3}{x^2}$

6. Find  $\lim_{x \rightarrow 10} \frac{\sqrt{x - 1} - 3}{x - 10}$

7. Find  $\lim_{x \rightarrow 1} \frac{1 - x}{\sqrt{5 - x} - 2}$

### Practice Problems

1. Find  $\lim_{x \rightarrow \infty} \frac{2x^3 + x^2 - 5}{5x^3 - 7x^2 + 1}$

2. Find  $\lim_{x \rightarrow 0} \frac{3x^8 - 1/2x^4 + x^3}{x^5 - 4x^3 + 10x^2}$

3. Find  $\lim_{x \rightarrow 6} \frac{\sqrt{x^2 - 20} - 4}{x - 6}$

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