

## History of Mathematical Ideas

### Quiz 4

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

You have 10 minutes to complete this quiz. If you have a question raise your hand and remain seated. In order to receive full credit your answer must be **complete**, **legible** and **correct**. Show your work, and give adequate explanations.

1. Define the following terms.

(a) algebraic number

A number is algebraic if it is a root of a nonzero rational polynomial.

(b) transcendental number

A number is transcendental if it is not algebraic.

2. What is Lindemann's famous result from 1882?

Lindemann proved that if  $\alpha \neq 0$  is algebraic, then  $e^\alpha$  is transcendental.