

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

Answer all questions and show your work. Unsupported answers may receive *no credit*. You may not use a calculator on this quiz. Allow 15 minutes for the quiz.

1. (6 points) Find the exact length  $L$  of the polar curve

$$r = \theta^2, \quad 0 \leq \theta \leq \sqrt{21}.$$

2. (4 points) Find the vertex, focus, and directrix of the parabola  $(x - 1)^2 = 8y$ .