

Show all work clearly and in order (on this sheet or an attached sheet) and circle your final answers.

Justify your answers algebraically whenever possible. Work without justification may not receive credit.

You have 25 minutes to take this 10 point quiz.

**1.** (*5 points*) Of all rectangles with a fixed perimeter  $P$ , give the dimensions of the one with largest area.

**2.** (*5 points*) Find positive numbers  $x$  and  $y$  so that their product is 12 while the quantity  $2x + y$  is as small as possible.