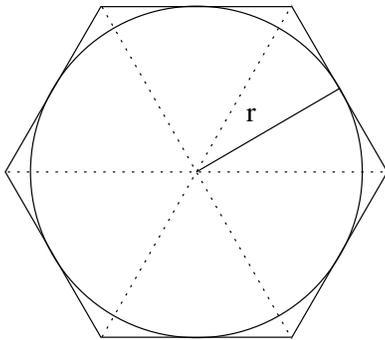


Answer the following questions. Display your answers clearly and neatly. Explain your reasoning. Use complete sentences.

1. Let u and v be two numbers which are positive or zero, whose sum is 10 and so that u^2v is as large as possible.
 - (a) Write down a function f and an interval $[a, b]$ so that the maximum value of f on the interval $[a, b]$ occurs at the number u described above.
 - (b) Find u and v .
2. Suppose a circle of radius r is inscribed in a hexagon as pictured. Find the area of the hexagon. (This formula for the area of a hexagon will be needed in the next problem.)



3. Answer parts 1–2 of the project in Stewart, pages 288–89. It will be helpful to read the example 2 on page 279–280 before beginning the project.

March 8, 2007