Questions

Answer all 3 questions Time 1 hour.

1) Given $f(x,y) = (x-a)^2 + (y-b)^2$ (Marks 7)

a) Sketch it's level sets

b) Show whether quasiconcave or quasiconvex

2) Given extrema of $z = 2x_1^2 + x_1x_2 + 4x_2^2 + x_1x_3 + x_3^2 + 2$
(Marks 7)

3) The consumer's utility function $u(x,y) = 100xy + x + 2y$.

If price of good $x = €2$

price of good $y = €4$

Budget $= €1000$

AND consumer spends entire budget

Then what is the utility maximizing bundle of goods (x^*, y^*)?

(Marks 6)