SHEET # 454 -

NAME: _____ Period: ____

# MINIMIZING DISTANCE FROM A POINT TO A CURVE

FIND THE DISTANCE FROM THE POINT $P(3,-1)$ TO

a, THE POINTS i) $Q(-2,-1)$

ii) $R(-2,-3)$

b, THE POINT $(x,y)$

c, THE POINT S ON $y = x^2 - 1$ WHEN $x = 2$.

d, ANY POINT $T(x,y)$ ON $y = x^2 - 1$, EXPRESSED AS A FUNCTION OF $x$ ONLY. MAKE A SKETCH OF $y = x^2 - 1$ AND THE POINT P. Use below coordinate system.

e, THE NEAREST POINT U ON $y = x^2 - 1$.

MINIMIZE DISTANCE SQUARED. USE TI-83.

GIVE $x$ AND $y$ COORDINATES: _____.

WHAT IS THE MINIMUM DISTANCE? _____