G2FERMAT

FERMAT's PRINCIPLE

t is the time to go from the initial position (0,0) to point (xq,q) with velocity v1
tt is the time to go from point (xq,q) to point (xp,p) with velocity v2
ttt is the time to go from point (xp,p) to the final position (xf,yf) with velocity v3
There is a q and p value for minimum time

$N := 40$

$i := 0 .. N \qquad k := 0 .. N \qquad q_i := i \qquad p_k := k$

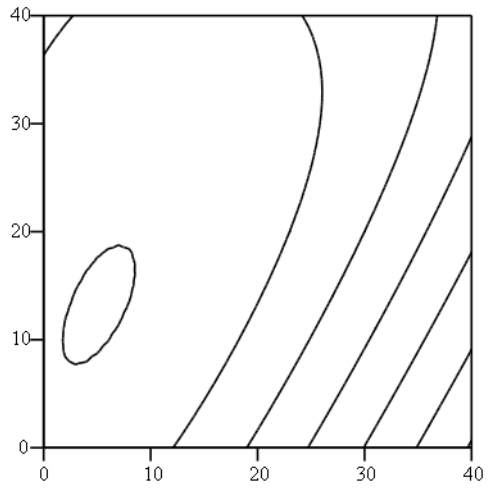
$xq := 20 \qquad xp := 40 \qquad xf := 60 \qquad yf \equiv 60$

$$t(q) := \frac{\sqrt{(xq)^2 + \left(q^2\right)}}{v1} \qquad tt(q,p) := \frac{\sqrt{(xp - xq)^2 + (p - q)^2}}{v2}$$

$$ttt(p) := \frac{\sqrt{(xf - xp)^2 + (yf - p)^2}}{v3}$$

$$T(q,p) := t(q) + tt(q,p) + ttt(p) \qquad M_{i,k} := T\left(q_i, p_k\right)$$

$v1 \equiv 14 \qquad v2 \equiv 21 \qquad v3 \equiv 52$



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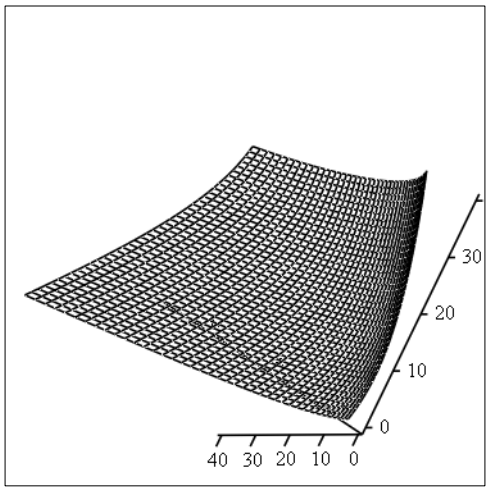

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