Brievenweger

9. draaihoek: 30^o

$^1/_4\,\pi$ rad $= 45^o$

Dus: $y = 70 \cdot \dfrac{\sin(30^o)}{\sin(30^o + 45^o)} = 36$

10. $70 \cdot \dfrac{\sin\alpha}{\sin(\alpha + {}^\pi/_4)} = 70 \quad \rightarrow \quad \sin\alpha = \sin(\alpha + {}^\pi/_4)$

$\pi - \alpha = \alpha + {}^\pi/_4$

$\rightarrow \quad \alpha = \dfrac{3}{4 \cdot 2}\pi = \dfrac{3\pi}{8}$

11. $\dfrac{dy}{d\alpha} = 70 \cdot \dfrac{\cos\alpha \cdot \sin(\alpha + {}^\pi/_4) - \cos(\alpha + {}^\pi/_4) \cdot \sin\alpha}{\sin^2(\alpha + {}^\pi/_4)} =$

$= 70 \cdot \dfrac{\sin(\alpha + {}^\pi/_4 - \alpha)}{\sin^2(\alpha + {}^\pi/_4)} = \dfrac{70 \cdot \sin({}^\pi/_4)}{\sin^2(\alpha + {}^\pi/_4)}$

12. $\dfrac{dy}{d\alpha}$ minimaal als $\sin^2(\alpha + {}^\pi/_4)$ maximaal

Dan moet gelden: $\sin(\alpha + {}^\pi/_4) = 1 \quad \rightarrow \quad \alpha + {}^\pi/_4 = {}^\pi/_2$

$\rightarrow \quad \alpha = {}^\pi/_4 = 0{,}79$