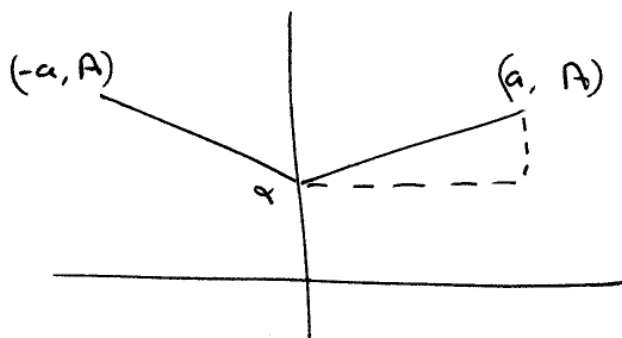


5.10

a)



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" $S = \pi(A+B)L$ "

$$S(\alpha) = 2\pi(A+\alpha)\sqrt{a^2 + (A-\alpha)^2}$$

$$\frac{dS(\alpha)}{d\alpha} = 0 \Rightarrow \sqrt{a^2 + (A-\alpha)^2} + \frac{(A+\alpha)(\alpha - A)}{\sqrt{a^2 + (A-\alpha)^2}} = 0$$

$$a^2 + (A-\alpha)^2 = A^2 - \alpha^2$$

$$a^2 - 2A\alpha + 2\alpha^2 = 0$$

$$\alpha = \frac{2A \pm \sqrt{4A^2 - 8a^2}}{4}$$

$$= \frac{1}{2}A \pm \frac{1}{2}\sqrt{A^2 - 2a^2}$$

If $A < a\sqrt{2}$
 $A^2 < 2a^2$

and the equation has no real roots.

