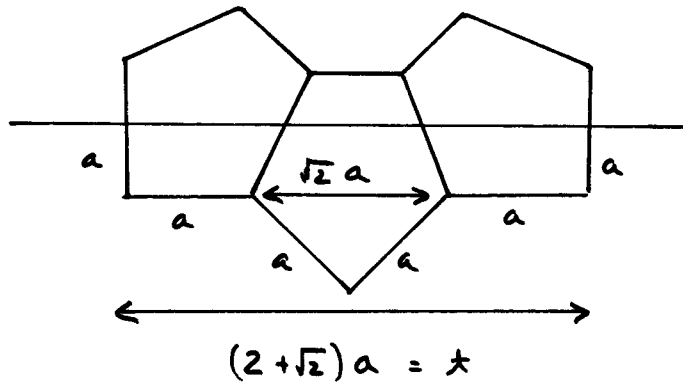


Lens/Pentaprism:Face  $a \times a$ 

a)



$$\text{Reduced thickness} = t/n = (2 + \sqrt{2})a/n$$

For the prism to just fit between the lens and the image plane if  $t/n = 100 \text{ mm} = f_e$

$$(2 + \sqrt{2})a/n = 100 \text{ mm}$$

$$n = 1.5$$

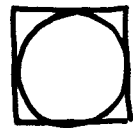
$$a = 29.3 \text{ mm} \cdot n = 43.9 \text{ mm}$$

b) There are two choices for the largest lens:

1) Lens fits inside prism aperture

$$D = 43.9 \text{ mm}$$

- all of the lens is used



2) Prism fits inside lens aperture

$$D = \sqrt{2}a = 62.1 \text{ mm}$$

- all of the prism aperture is used

