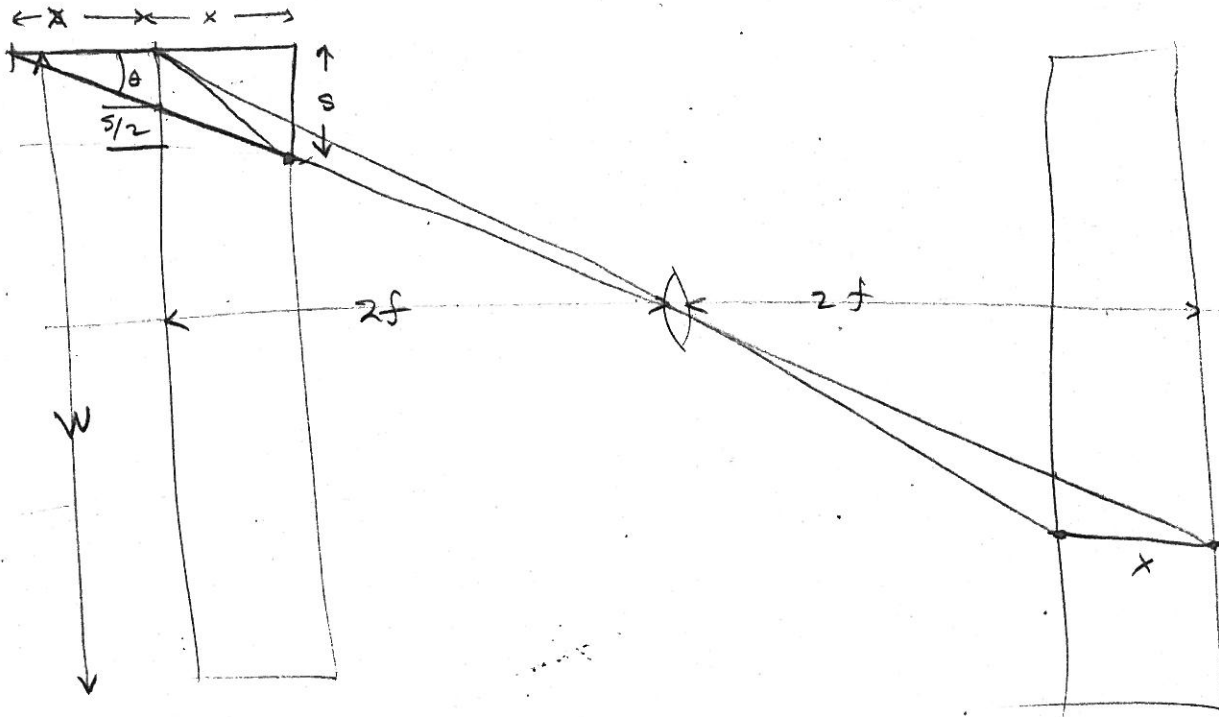


# Geometry of first step:



$$\frac{S}{2x} = \tan \theta$$

$$\theta = \tan^{-1} \frac{\frac{W}{2} - \frac{S}{2}}{2f} = \tan^{-1} \frac{W-S}{4f}$$

$$\theta = \tan^{-1} \frac{50 - 1.455}{140} = \tan^{-1} \frac{48.545}{140}$$

$$x = \frac{S}{2} \tan 19^{\circ} 8'$$

$$= \tan^{-1} .347$$

$$x = \frac{1.727}{.347} = 2.095$$

$$= \tan^{-1} 19^{\circ} 8'$$

OK

$$X = \frac{S}{2 \tan \theta} = \frac{2Sf}{W-S} =$$

$$f = 35 \text{ mm} \quad X = \frac{2(1.455)35}{48.545} = 2.095 \text{ cm}$$

$$R = \frac{42}{2X} = \frac{66.2}{X} = 31.6 \text{ m/m}$$

$$f = 28 \text{ mm} \quad X = \frac{2Sf}{W-S} = .05994 f = 1.675 \text{ mm}$$

$$R = 39.5$$

$$f = 10 \text{ mm} \quad X = .06 f = .6 \text{ mm}$$

$$R = \frac{31.6}{.6} = 53 \text{ m/m}$$