



path diff $y - 1.65$

A. const. $y - 1.65 = n\lambda = n \left(\frac{340}{120} \right) = 2.833n$

$n=0$

$y = 1.65 \text{ m}$

$n=1$

$y - 1.65 = 2.833$

$y = 4.48 \text{ m}$

B. dest.

$y - 1.65 = \left(\frac{2n+1}{2} \right) \lambda =$

$n=0$

$y - 1.65 = \frac{2.833}{2}$

$y = \del{3.07} \underline{\underline{3.07 \text{ m}}}$

C $\frac{15 \text{ miles}}{\text{hr}} \times \frac{10 \text{ km}}{6.2 \text{ miles}} \times \frac{1000 \text{ m}}{\text{km}} \times \frac{\text{hr}}{3600 \text{ s}} = 6.72 \text{ m/s}$

$f_{\text{obs}} = \frac{v}{v - v_s} f_{\text{orig}}$