3.7) $c = \frac{c_0}{\sqrt{\varepsilon_r}} = \frac{c_0}{2} \approx 1.5 \cdot 10^8 \, m/s$

$\lambda_r = \frac{c}{f} \approx 0.1666 m$

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3.8) Tn. Nr $f = 400MHz$

$10km$

$r_1 = \sqrt{\frac{\lambda \cdot d_1 \cdot d_2}{d_1 + d_2}} \approx 43,3m$ $\cdot 0,6 = 26m$

$v = h\sqrt{\frac{2(d_1+d_2)}{\lambda d_1 d_2}} \approx 0,33$ $L(v) = 6,9 + 20\log(\sqrt{(v-0,1)^2} + v - 0,1)$

$\approx 8,88 dB$

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3.10) Ta Ne

15m 5m 5km

$f = 176,1Hz$

$r_1 = \sqrt{\frac{\lambda d_1 d_2}{d_1 + d_2}} = 4,74m$ $\cdot 0,6 = 2,85m$

$10m - 2,85 = 7,15m$

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4.5) $G = \frac{4\pi}{\lambda^2} A_e = 4\pi \left(\frac{\pi}{\lambda}\right)^2 \cdot a \cdot b$

$G_{dB} = 19 dB$

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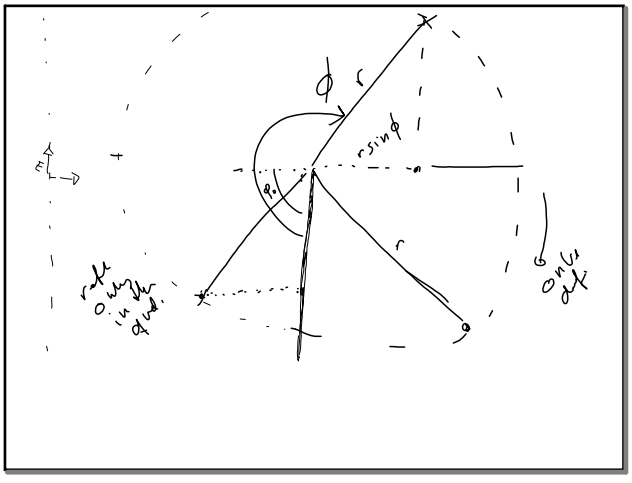

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