1.2

Max radiation intensity of 90% efficient antenna is 200 mW/unit solid angle. (U_{max})

Find directivity and gain when:

a) input power is 125.66 mW

$$D_o = \frac{4\pi \cdot U_{max}}{P_{RAD}} = \frac{4\pi \cdot 200\ mW/U.S.A.}{0.9 \cdot 125.66\ mW} = 22.22 = 13.47\ dB$$

$$G_o = e_t D_o = 0.9 \cdot 22.22 = 20.00 = 13.01\ dB$$

b) radiated power is 125.66 mW

$$D_o = \frac{4\pi \cdot U_{max}}{P_{rad}} = \frac{4\pi \cdot 200\ mW/Fricked \rightarrow}{125.66\ mW} = 20 = 13.01\ dB$$

$$G_o = e_t D_o = 0.9 \cdot 20 = 18 = 12.55\ dB$$