

1. A circular parabolic dish has an efficiency of 91%, a radius of 1 m, and Gain of 300. What frequency is the antenna designed for?

$$f = \boxed{867 \text{ MHz}}$$

2. A circular parabolic dish with a diameter of 600 mm is used receive a satellite TV signal at 18 GHz. The dish has an efficiency of 90%. What is the dish's gain?

$$\text{Gain} = \boxed{11512}$$

3. A TACAMO aircraft is used to send messages to a submarine using a carrier frequency of 30 KHz. How long of an antenna must the aircraft use to send the signal (assume a dipole antenna is used)?

$$\text{Length} = \boxed{5\text{km}}$$

4. A circular dish antenna is to be used to communicate with a satellite communication system, using a frequency of 4.6 GHz. The dish has a diameter of 300 mm and an efficiency of 86%. What is the gain of the antenna?

$$\text{Gain} = \boxed{179.6}$$