# Quiz 5

May 30, 2025      1:09 PM

1)

$$\text{Bit rate} = f_s \times n_b$$

$f_s = 2 \times f_{max}$          $SNR_{db} = 6.02 n_b + 1.76$

$f_s = 2 \times 500$          $31.75 = 6.02 n_b + 1.76$

$f_s = 1000 \, Hz$          $4.9817 = n_b$

$\qquad\qquad\qquad\qquad n_b = 5 \; bits$

$\text{Bit rate} = 1000 \times 5$

$\text{Bit rate} = 5000 \; \text{bits per second}$