6301092l ศุภกร หอยข่อ sec 3

$AM = [g + 6 \cdot m(t)] \cdot \cos(\omega t) \;/\; 6 \cdot m(t) = 2 \cdot \cos(\mu t)$

ก. ถี่ของตัวพา = 20 Hz

ข. ถี่ของสัญญาณ = 100 Hz

$g = 3$

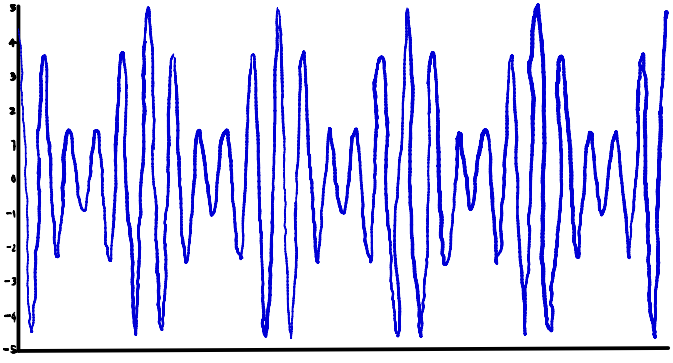
$AM = [g + 2\cos(\mu t)]\cos(\omega t)$

$\omega = 2\pi f_c t = 200\pi t$

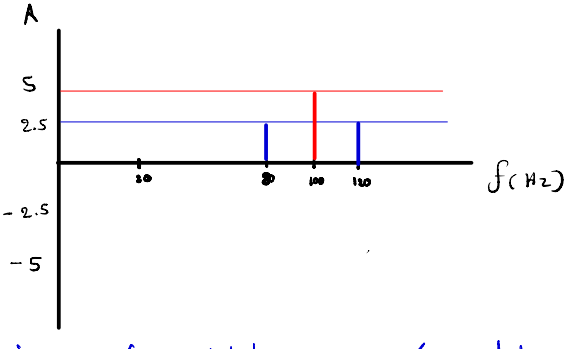
$\mu = 2\pi f_m t = 40\pi t$

$AM = [g + 2\cos(40\pi t)] \cdot \cos(200\pi t)$

สัญญาณ AM ใน Time Domain



สัญญาณ AM ใน Frequency Domain



ค่าดรรชนีการ Modulation index (Modulation Depth)

$m = \dfrac{P - D}{P + D}$

$P = 5 - (-5) = 10$

$D = 1 - (-1) = 2$

$= \dfrac{10 - 2}{10 + 2}$

$= \dfrac{8}{12} = \dfrac{4}{6} = 0.67$ Under - Modulate