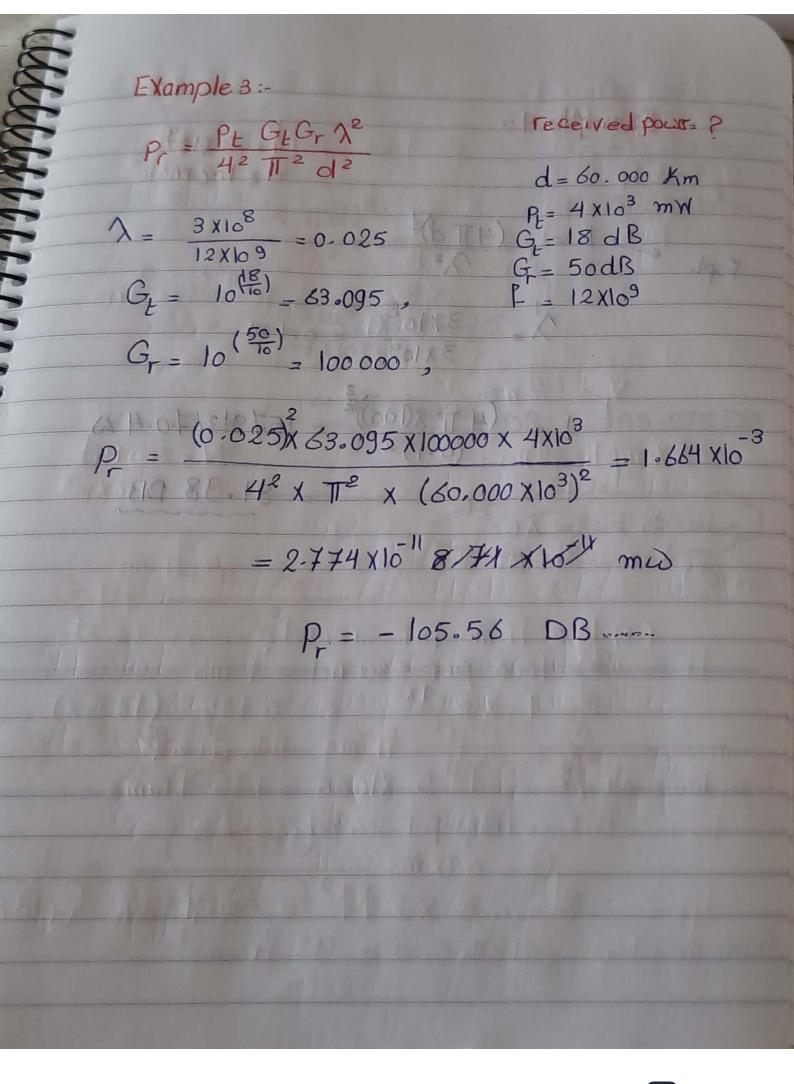
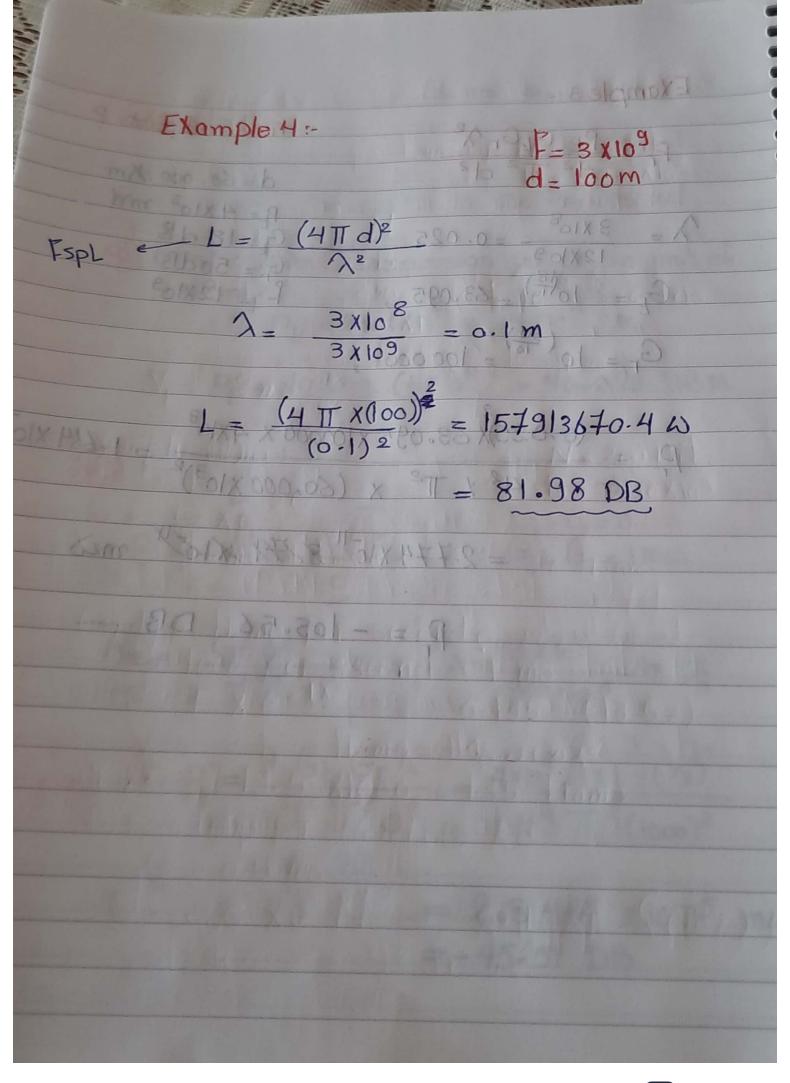
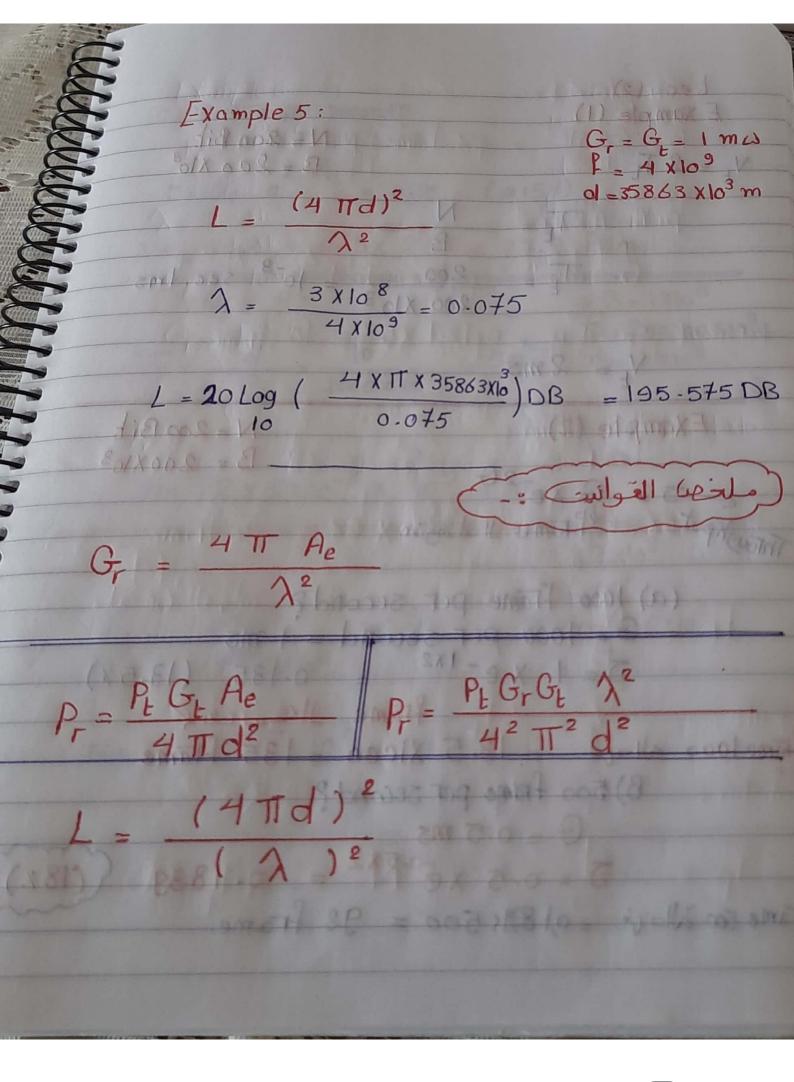
TIPPIP section 1 => (Samah) HAS PARTE OF THE PER Example 1: effective area = 2.7m 19 what is gain of The receiver? Frequency = 20 ×109 Pr = 30 mw Gr= 4TT Ae  $M = \frac{3 \times 10^9}{20 \times 10^9} = 0.015 \text{ m}$ Gr = HTT x 2.7 = 150796.4474 mw (0.d5)2 Gr= 150796-4474 1 mw Gr = 10 Log (150796-4474) = 51.783911 dB B) what is the Receiver power if The & receiver is 5 km away from The transmitter?  $d = 5 \times 10^{3}$   $G_{L} = 30 \text{ db} = > 10$   $m\omega = \frac{P_{L}G_{L}}{4\pi d^{2}}$ 1000 mw \*P= 30×1000×27 = 2.757×10-4 mis = lo Log (2.757 X10") = -35.88D

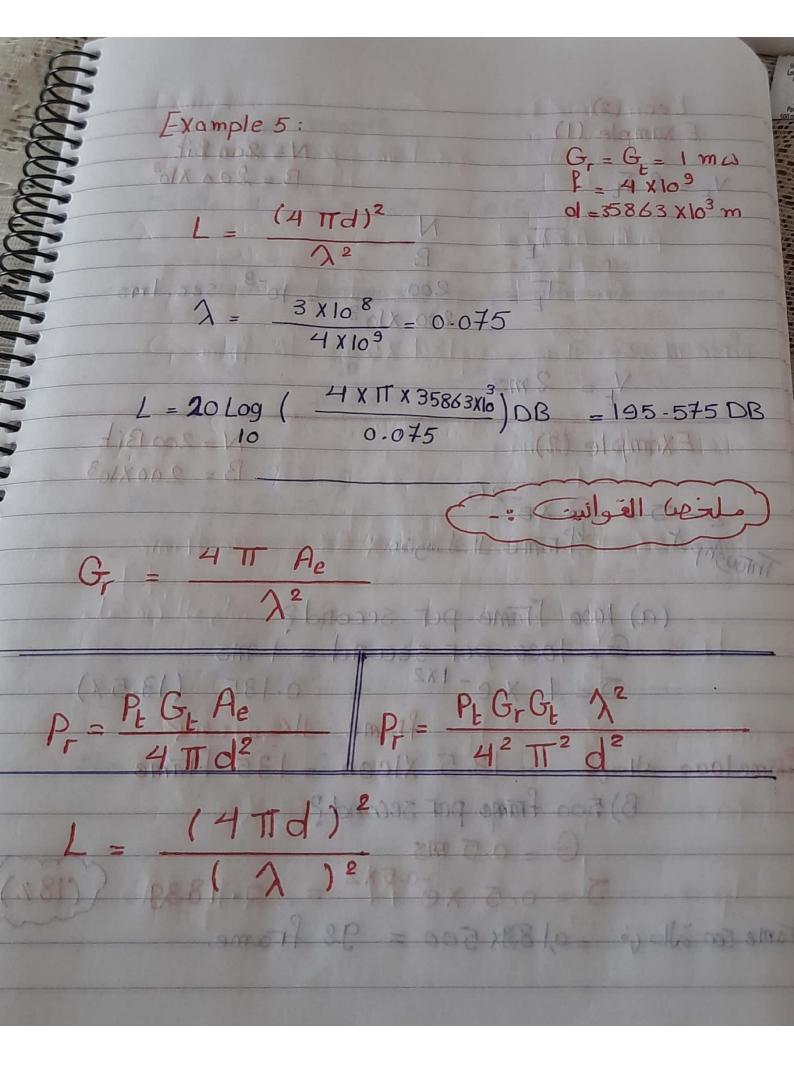
section 1 => (Samah) ------Example 1: effective area = 2.7m To what is gain of The receiver? Frequency = 20 ×109 P = 30 m W  $\lambda = \frac{3 \times 10^8}{20 \times 10^9} = 0.015 \text{ m}$ Gr= 411 x 2.7 = 150796.4474 mw (0.05)<sup>2</sup> (0.05)<sup>2</sup> (Gr= 150796.4474 \$ mw G-= 10 Log (150796.4474) = 51.783911 dB B) what is the Receiver power if The & receiver is 5 Km away From The transmitter? d= 5x103 (30) P= PtGt Ae
(30) MW = 4TT d² 1000 mw  $\# P = \frac{30 \times 1000 \times 2.7}{4 \text{ TT (5)}^2} = 2.757 \times 10^{-4} \text{ mw}$ = lo Log (2.757 X10-4) = -35.880

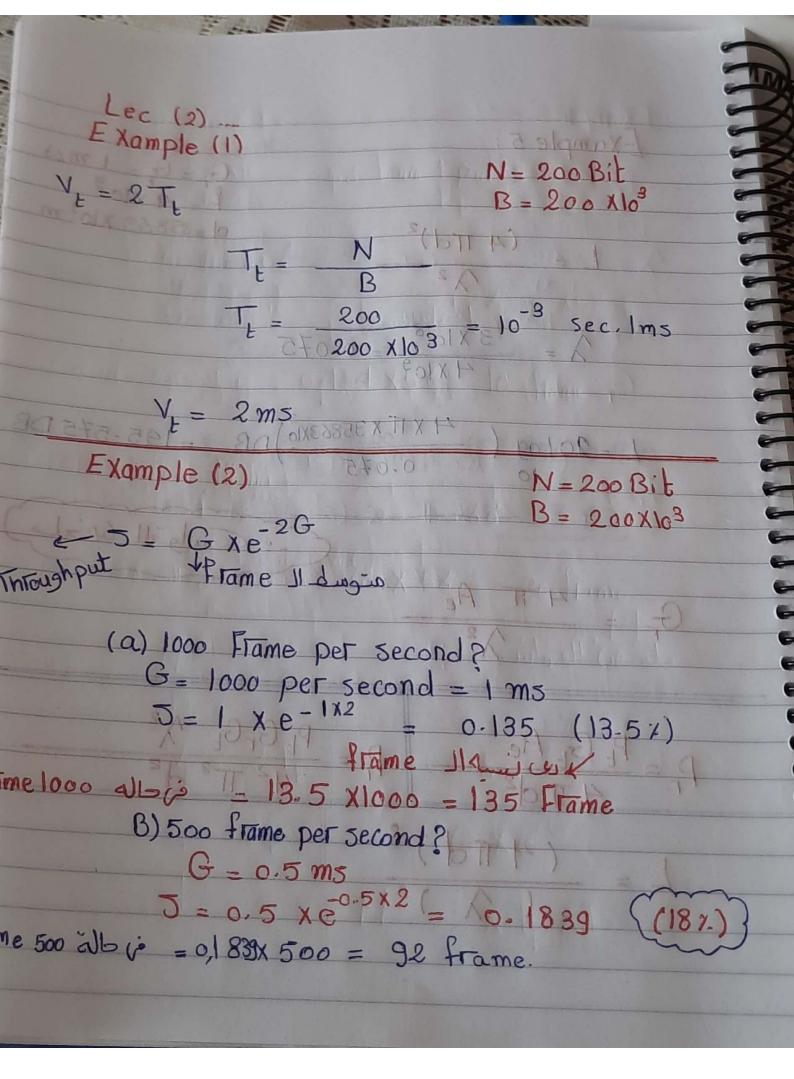
(domes) + 1 makes Example 2:-PE - 40W In free spac 2 what is the Transmission power in unit of dBmp P1 = 40 × 103 = 4 × 104 ms PE = 10 Log (4x104) = 46.020 DBM d=1000m Pt Gt (Ae) Gt=Gt=0 dB Gt=Gt=1 mw A= Gr 12 /3 X 108 = 1/3  $P_{r} = \frac{P_{t}G_{t}G_{r}\Lambda^{2}}{4^{2}\Pi^{2}d^{2}} = \frac{4\chi b^{4}\chi I\chi I\chi (\sqrt{3})^{2}}{4^{2}\Pi^{2}(1000)^{2}}$ = 2.81447 x 10-5 mw =-45.51 DB

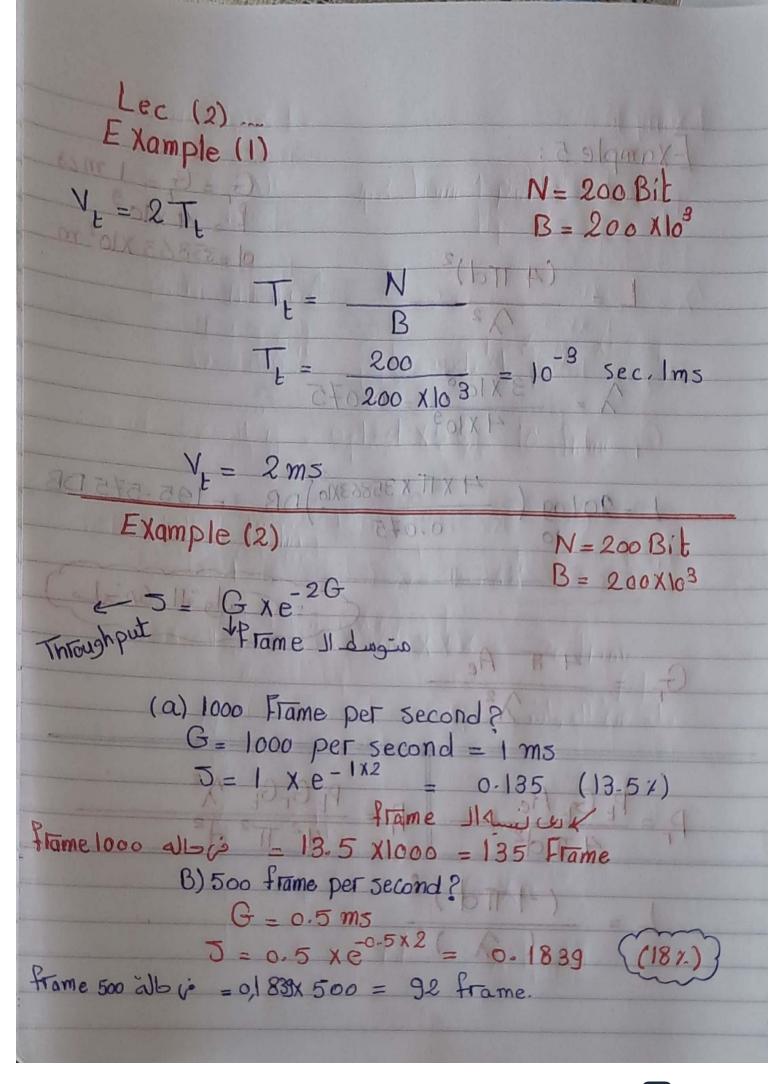






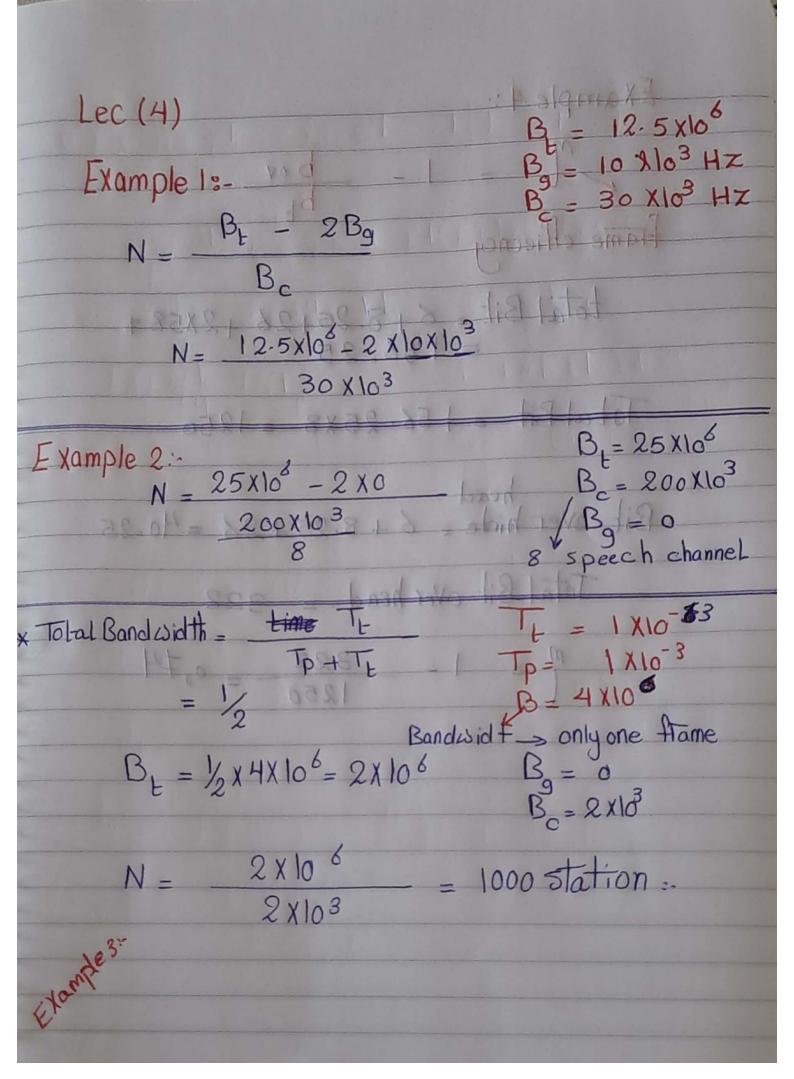






(C) 250 Fame per second? G = 1/4 ms  $5 = \frac{1}{4} e^{-2x^{1/4}} = 0.15 \quad (0.15.7)$ 250 EULO = 0.15 x 250 = 37.9 Frame 5 B = 1 X109 Example 4:  $\frac{10}{10} = \frac{5 \times 10^{-6}}{5} = \frac{200000 \times 10^{3}}{5}$  $N = 2 \times 5 \times 10^{-6} \times 10^{9} = 10^{4}$  $d = 2 \times 10^3$ EXa Speed = 2x10°

Example 6:-B = 56 × 103 = 56 Frame per second Pute Alloha: G=0.5 5=0.184 Persecond 56501010 = 0.184 X56 = 10 frame Slotted Alloha: G=1 5= 0.368 Hamer 56 = 0.368 x 56 = 20 + Tame pure: >N = 2xTpxB



Example 4: Frame efficincy total Bit = 6+8.25+26 +2×58 \$
= 156.25 Total Bit = 156.25 x8 = 1250 Bit-over hide = 6 + 8.25 + 26 = 40.25 Total-Bit over head = 322 0,74

