



INTERNATIONAL ATOMIC ENERGY AGENCY
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION



INTERNATIONAL CENTRE FOR THEORETICAL PHYSICS
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SMR/98 - 10

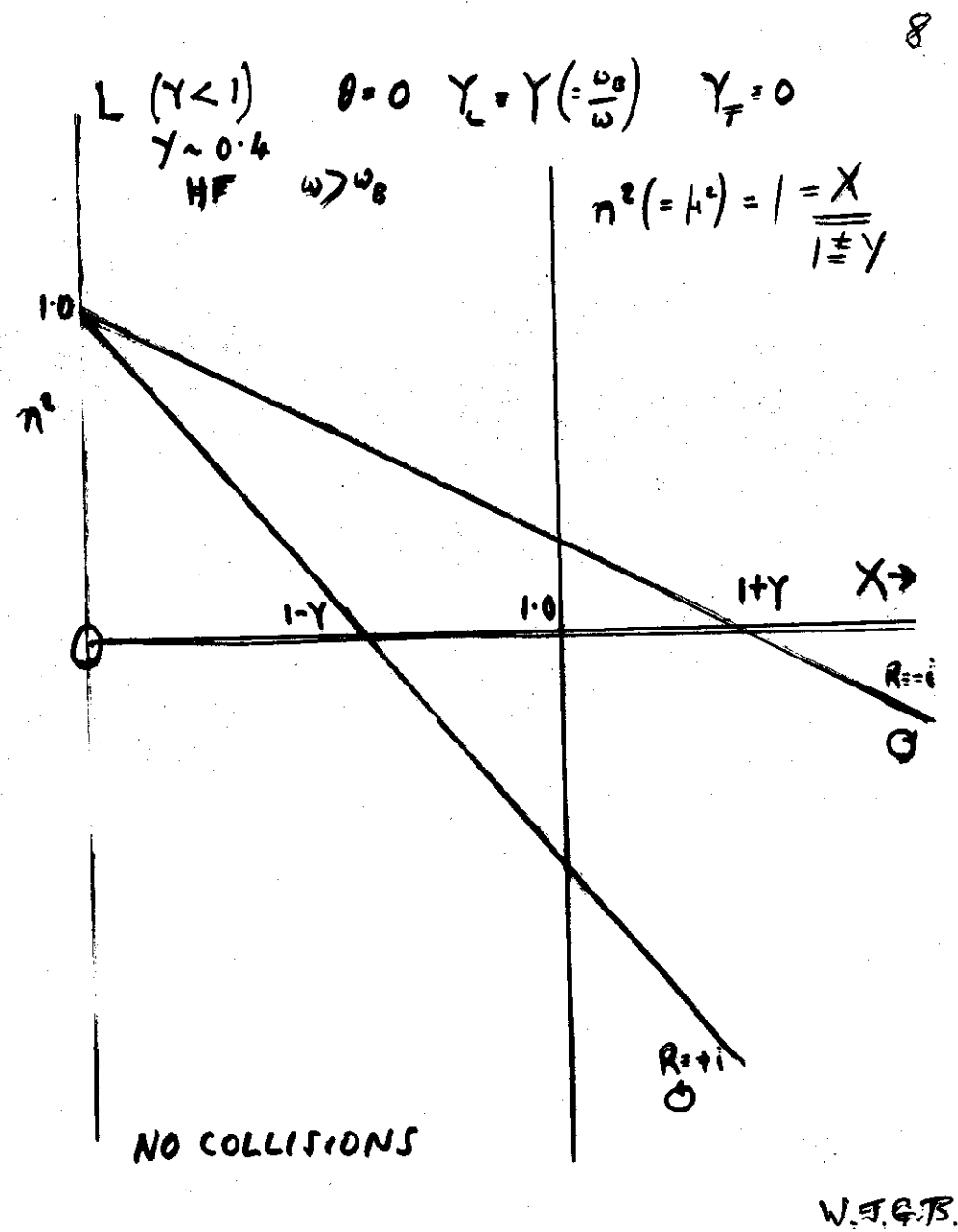
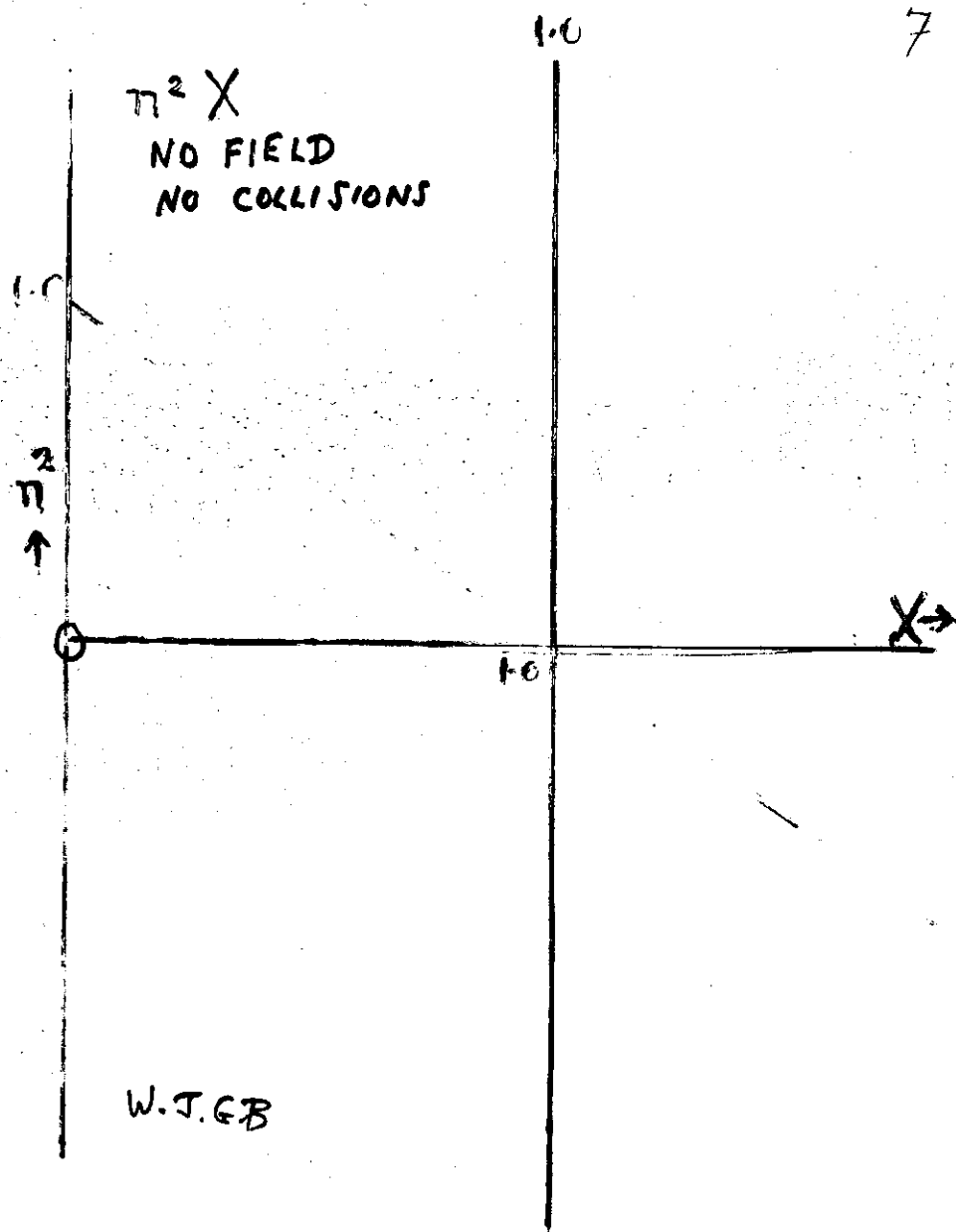
AUTUMN COURSE ON GEOMAGNETISM, THE IONOSPHERE
AND MAGNETOSPHERE

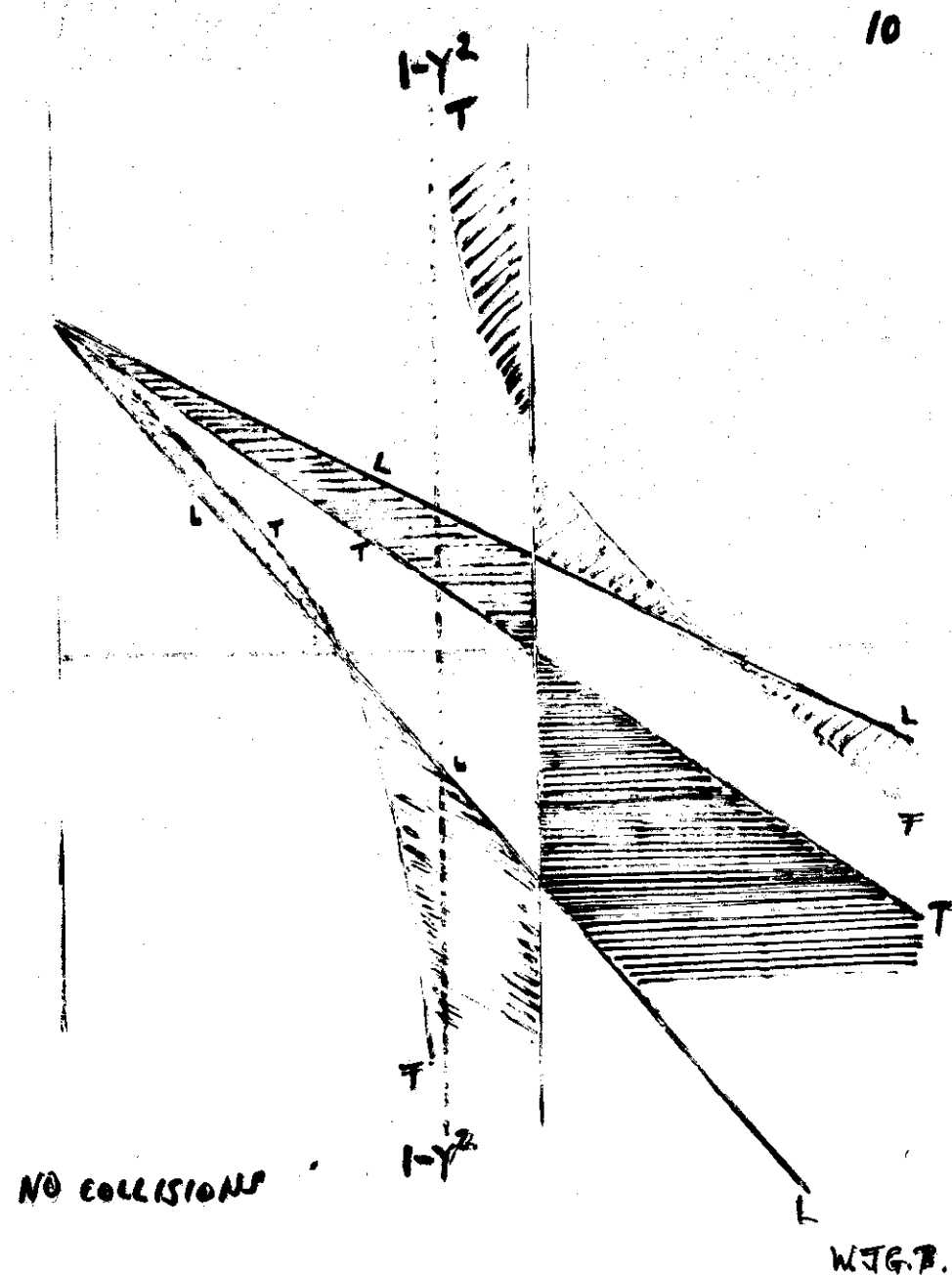
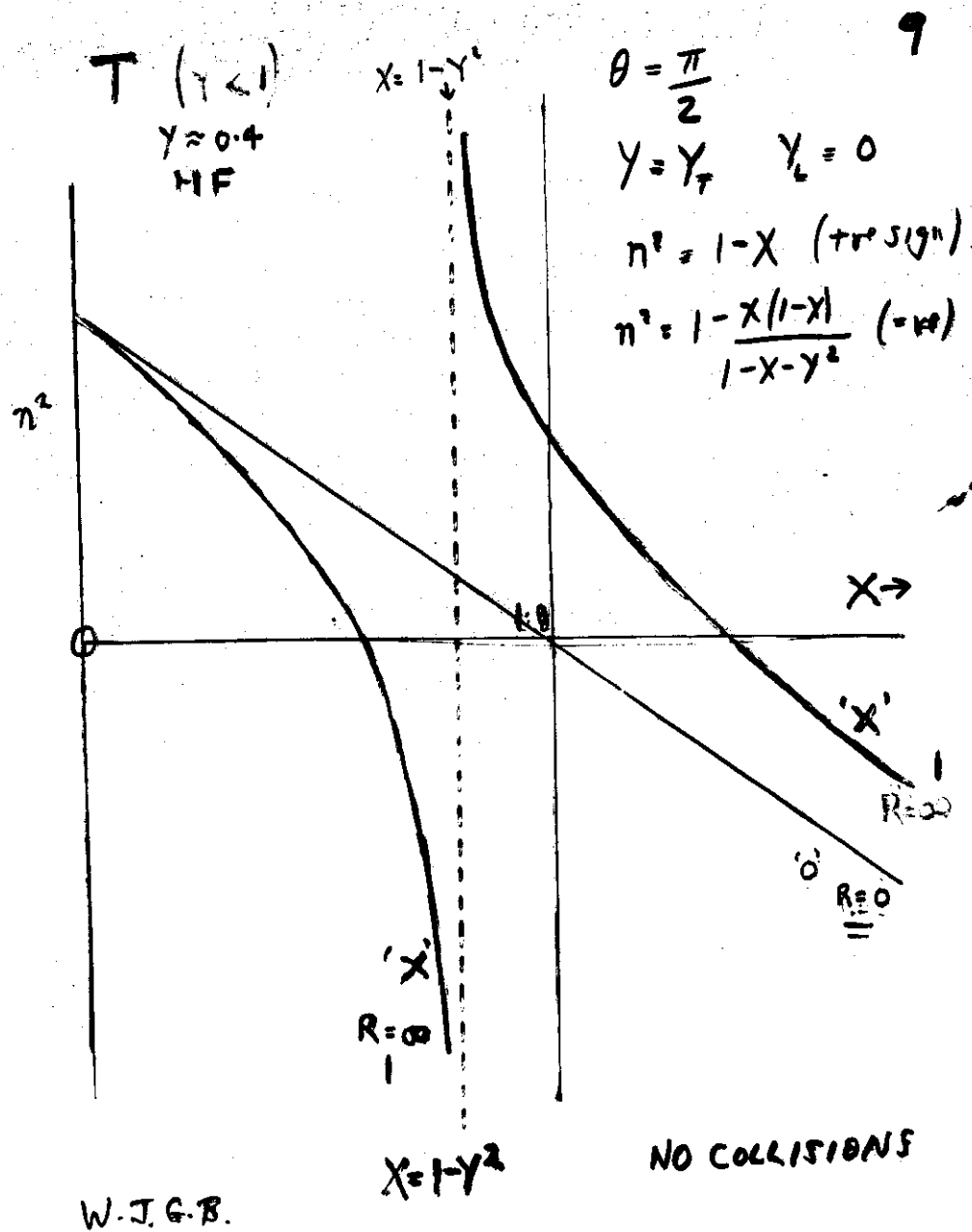
(21 September - 12 November 1982)

IONOSPHERE (Lecture 4)

Sir Granville BYENON
Department of Physics
University College of Wales
Aberystwyth
Wales, U.K.

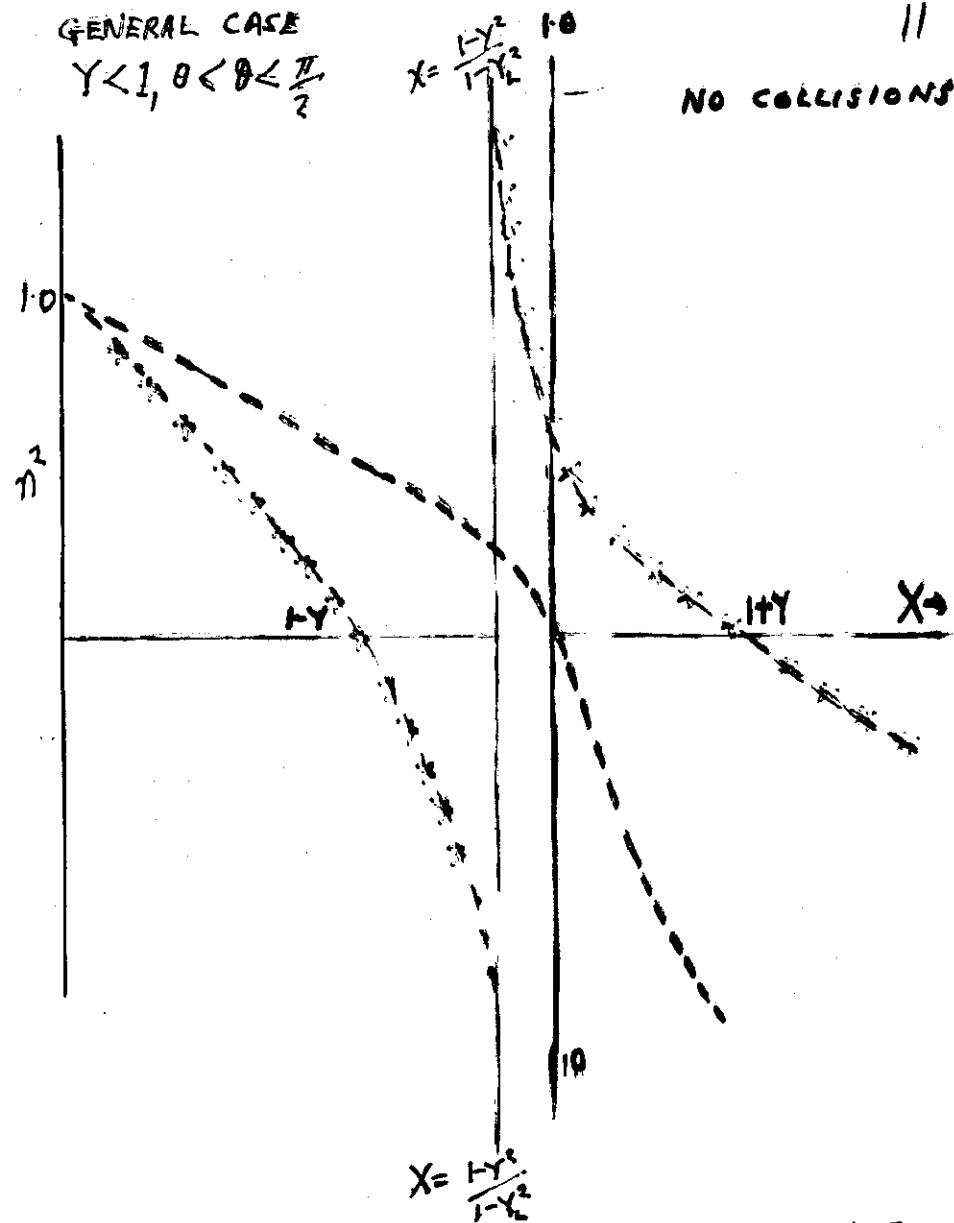
These are preliminary lecture notes, intended only for distribution to participants.
Missing or extra copies are available from Room 230.





GENERAL CASE

$$Y < 1, 0 < \theta < \frac{\pi}{2}$$

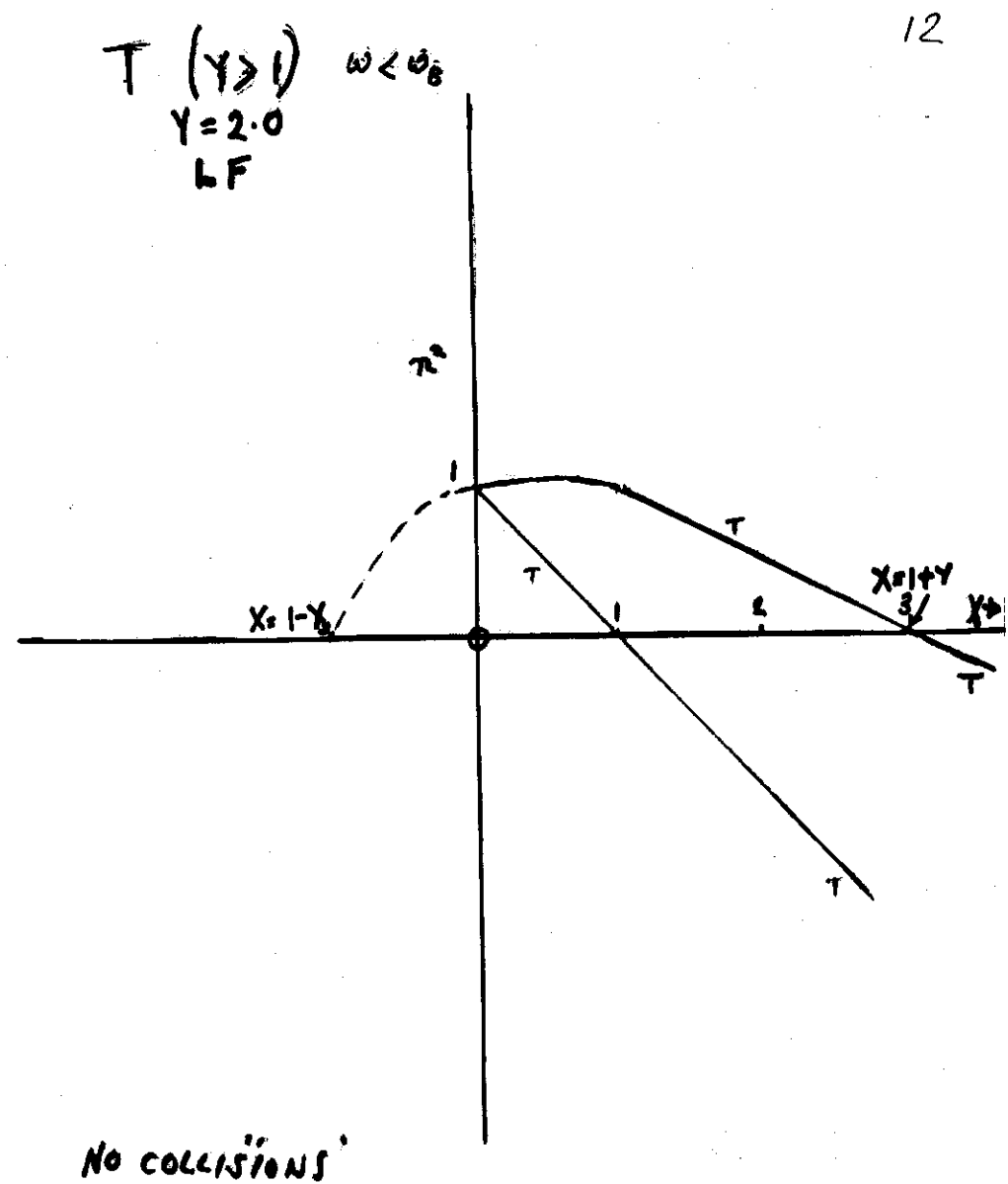


W.J.G.B

$$T (Y > 1) \quad \omega < \omega_0$$

$$Y = 2.0$$

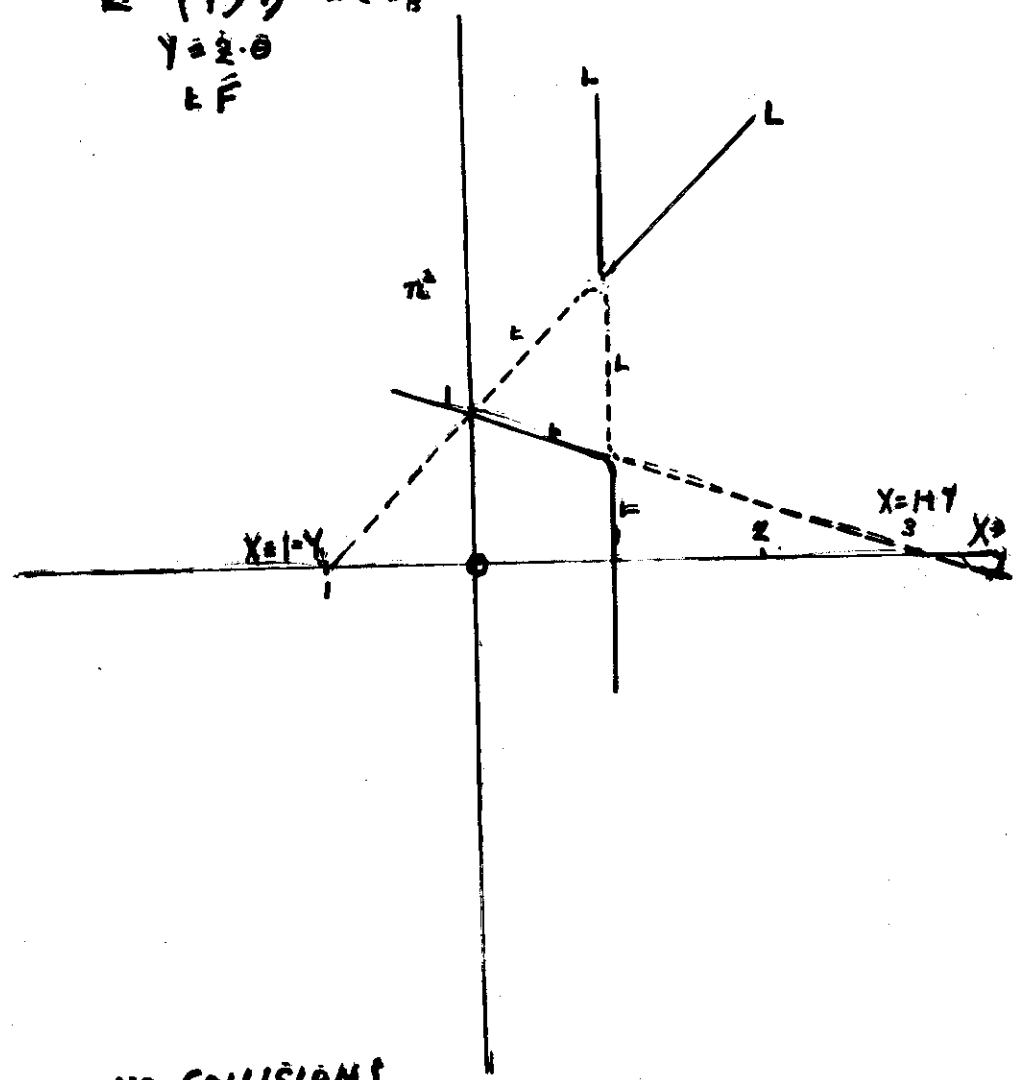
$$LF$$



W.J.G.B

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$L (Y > 1)$ $\omega < \omega_B$
 $Y = 2.0$
 $L F$



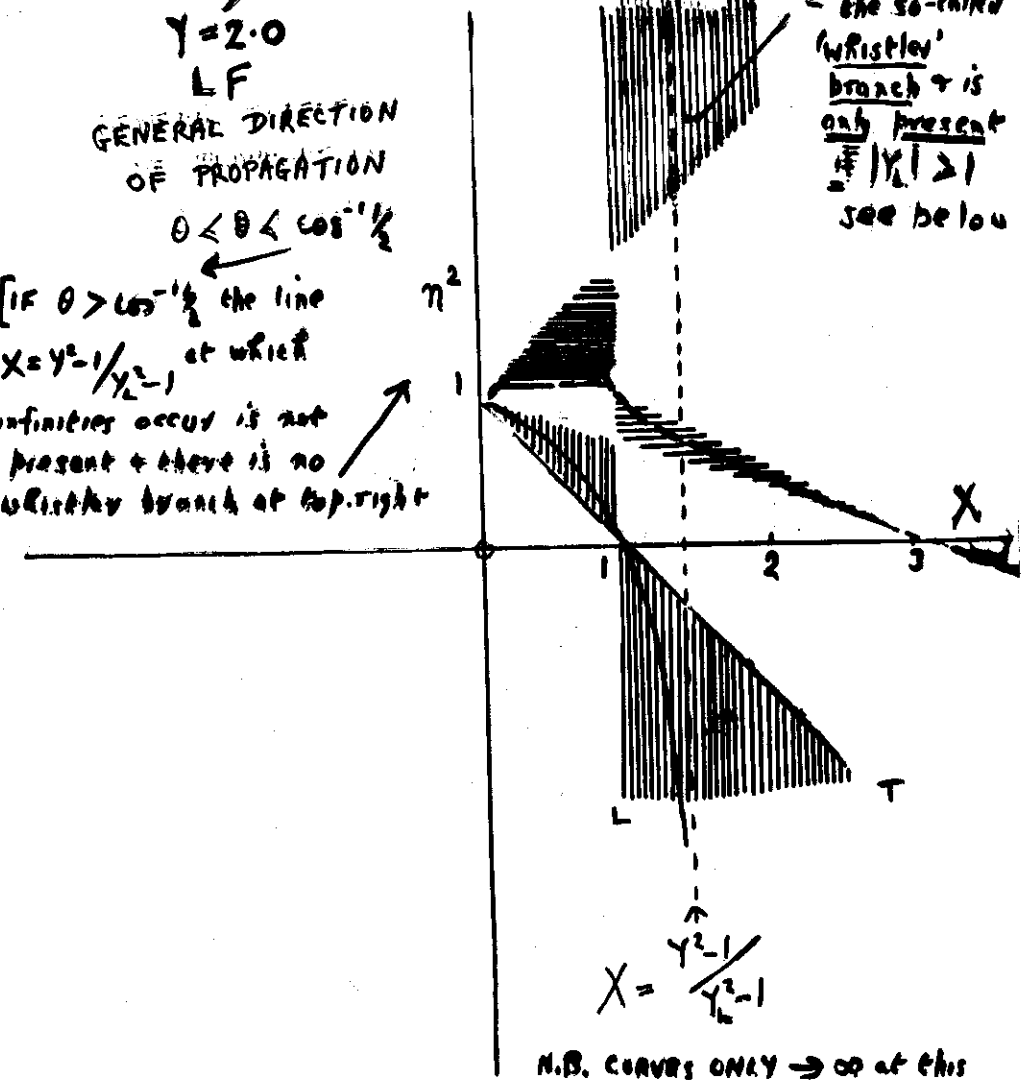
NO COLLISIONS

W.J.G.B.

$Y > 1$
 $Y = 2.0$
 $L F$

GENERAL DIRECTION
 OF PROPAGATION
 $0 < \theta < \cos^{-1} \frac{1}{Y}$

[If $\theta > \cos^{-1} \frac{1}{Y}$ the line
 $X = Y^2 - 1/Y^2 - 1$ at which
 infinities occur is not
 present & there is no
 whistler branch at top right



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N.B. CURVES ONLY $\rightarrow \infty$ at this
 value of X provided $|Y_L| > 1$
 i.e. if $\cos \theta > 1/Y$

NO COLLISIONS
 W.J.G.B.