$z_{in} = \frac{Z_{in}}{Z_0} = \frac{150 + j150}{75}$

$z_{in} = 2 + 2j$

$y_{in} = 0.25 + j0.25$

$\ell = 0.2\,m$

$\beta = 125.6603$

$\lambda = 0.05$

$\frac{d}{\lambda} = \frac{0.2}{0.05} = 4\lambda$

$\Gamma = 0.62\angle 30°$

HW2 problem 1d)

$z_L(-0.2\,m)$

$\frac{d}{\lambda} = \frac{-0.2\,m}{0.05} = -4\lambda$

$\Gamma = 0.62\angle 102°$

The Complete Smith Chart

Black Magic Design

$z_L(\ell) = 0.38 + j0.75\ \Omega$

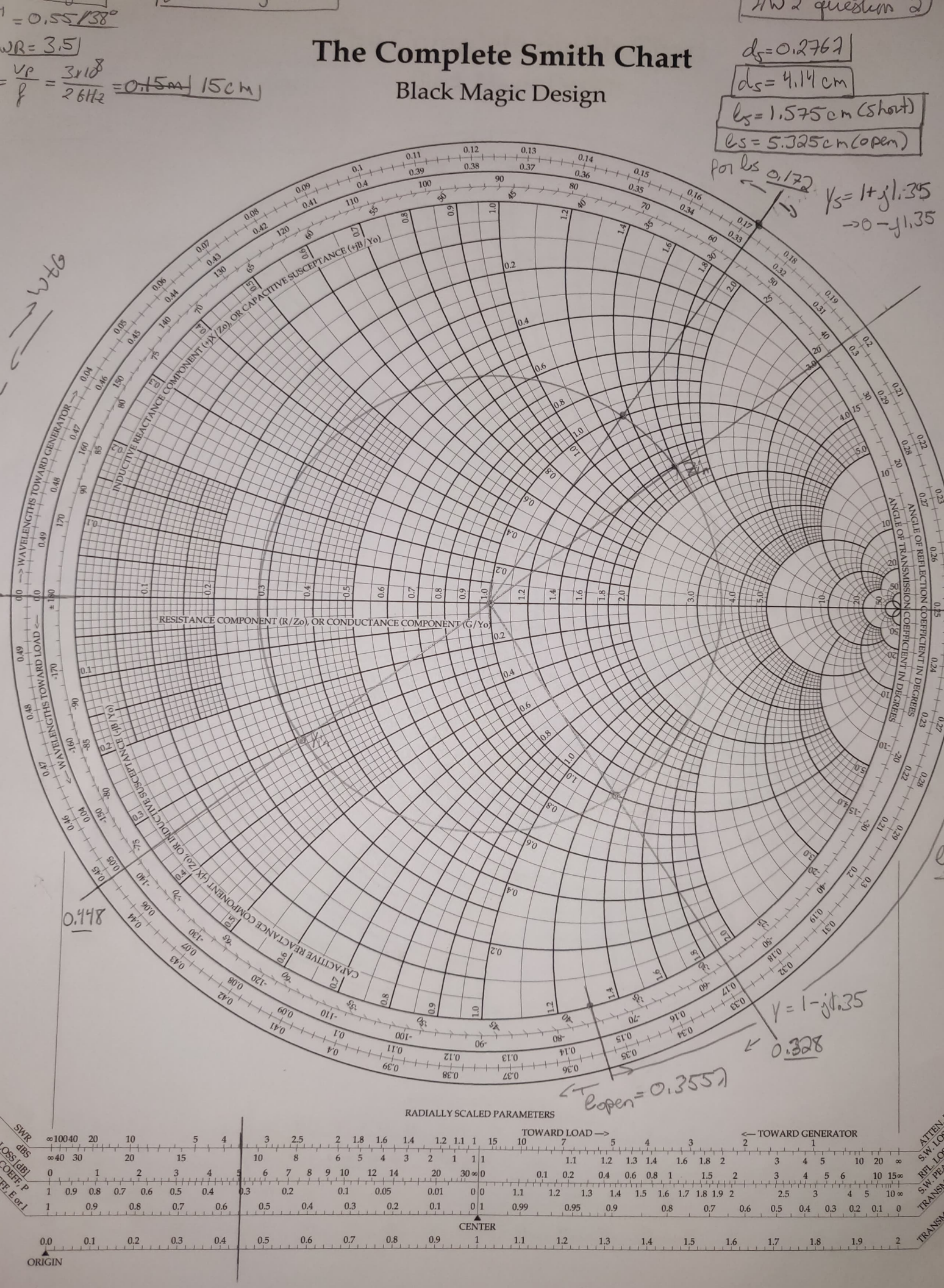
0.12

0.2097

SWR = 4.3

$\Gamma = 0.62$

$\Gamma = 0.62\angle 30°$


The Complete Smith Chart
Black Magic Design
INDUCTIVE REACTANCE COMPONENT (+jX/Zo) OR CAPACITIVE SUSCEPTANCE (+jB/Yo)
CAPACITIVE REACTANCE COMPONENT (-jX/Zo) OR INDUCTIVE SUSCEPTANCE (-jB/Yo)
RESISTANCE COMPONENT (R/Zo), OR CONDUCTANCE COMPONENT (G/Yo)
--> WAVELENGTHS TOWARD GENERATOR -->
<-- WAVELENGTHS TOWARD LOAD <--
ANGLE OF REFLECTION COEFFICIENT IN DEGREES
ANGLE OF TRANSMISSION COEFFICIENT IN DEGREES
RADIALLY SCALED PARAMETERS
TOWARD LOAD -->
<-- TOWARD GENERATOR
SWR
dBs
LOSS [dB]
COEFF. P
FF. E or I
ATTEN.
S.W. LOS
RFL. LO
S.W. PE
TRANSM
CENTER
ORIGIN

HW2 prob'n 3

$Z_L = 1.5 + j1.5\,\Omega$

$= 0.54\angle 41°$

$= 0.33 + j0.33$

$SWR = 3.4$

$= 7.5\,cm$

$= 0.3 + j0.32$

$d_1 = \frac{8\frac{1}{3}\,mm}{\lambda} = 0.111\lambda$

$d_2 = \frac{1.875\,cm}{\lambda} = 0.25\lambda$

$Y_{in} = 0.425 + j0.49$

The Complete Smith Chart

Black Magic Design

$Y_1 = 0.32 + j0.32$

0.193

0.111λ

0.444

RESISTANCE COMPONENT (R/Zo), OR CONDUCTANCE COMPONENT (G/Yo)

INDUCTIVE REACTANCE COMPONENT (+jX/Zo), OR CAPACITIVE SUSCEPTANCE (+jB/Yo)

CAPACITIVE REACTANCE COMPONENT (-jX/Zo), OR INDUCTIVE SUSCEPTANCE (-jB/Yo)

ANGLE OF REFLECTION COEFFICIENT IN DEGREES

ANGLE OF TRANSMISSION COEFFICIENT IN DEGREES

WAVELENGTHS TOWARD GENERATOR →

← WAVELENGTHS TOWARD LOAD

RADIALLY SCALED PARAMETERS

TOWARD LOAD →

← TOWARD GENERATOR

SWR

PTN. LOSS [dB]

RFL. COEFF, P

COEFF, E or I

ATTEN. [dB]

S.W. LOSS COEFF

RFL. LOSS [dB]

S.W. PEAK (CONST

TRANSM. COEFF, P

TRANSM. COEFF, E

CENTER

ORIGIN