Gaussian Imaging

Fill in the missing entries for the conditions given.

The distances are Gaussian distances (measured from the respective principal planes).

f_E	n	n'	z	z'	m
100	1.0	1.0	-200		
100	1.0	1.0	-50		
100	1.0	1.0		-200	
100	1.0	1.0			0.25
100	1.0	-1.0			-1.0
100	1.0	-1.0	200		
-100	1.0	1.0	-100		
-100	1.0	1.0		100	
-100	1.0	-1.0			3.0
-100	1.0	-1.0		-50	

Solution:

$$\frac{z}{n} = \frac{(1-m)}{m} f_E \qquad \frac{z'}{n'} = (1-m) f_E \qquad \frac{n'}{z'} = \frac{n}{z} + \frac{1}{f_E}$$

$$m = \frac{f_E}{\frac{z}{n} + f_E} \qquad m = \frac{f_E - \frac{z'}{n'}}{f_E}$$

f_E	n	n'	z	z'	m
100	1.0	1.0	-200	**200**	**-1.0**
100	1.0	1.0	-50	**-100**	**2.0**
100	1.0	1.0	**-66.7**	-200	**3.0**
100	1.0	1.0	**300**	**75**	0.25
100	1.0	-1.0	**-200**	**-200**	-1.0
100	1.0	-1.0	200	**-66.7**	**0.33**
-100	1.0	1.0	-100	**-50**	**0.5**
-100	1.0	1.0	**50**	100	**2.0**
-100	1.0	-1.0	**66.7**	**-200**	3.0
-100	1.0	-1.0	**33.3**	-50	**1.5**