Thin lens practice problems

1. Given an object distance z = 120. mm and a magnification = −1.5, what is the focal length f and the image distance z'?

2. Given an image distance z' = −140. mm and a focal length f = −40. mm, what is the object distance z and the magnification m?

3. Given a focal length f = −80. mm and a magnification m = 0.5, what is the object distance z and the image distance z'?

4. Given a focal length f = 75. mm and a magnification m = −0.75, what is the object distance z and the image distance z'?

5. Given a focal length f = −60. mm and a magnification m = 0.25, what is the object distance z and the image distance z'?

6. Given an image distance z' = −140. mm and a magnification m = −0.25, what is the focal length f and the object distance z?

7. Given an image distance z' = −180. mm and a focal length f = 75. mm, what is the object distance z and the magnification m?

8. Given a focal length f = 25. mm and a magnification m = −3., what is the object distance z and the image distance z'?

9. Given an object distance z = 120. mm and an image distance z' = −80. mm, what is the focal length f and the magnification m?

10. Given an object distance z = 120. mm and a focal length f = −80. mm, what is the image distance z'? and the magnification m?