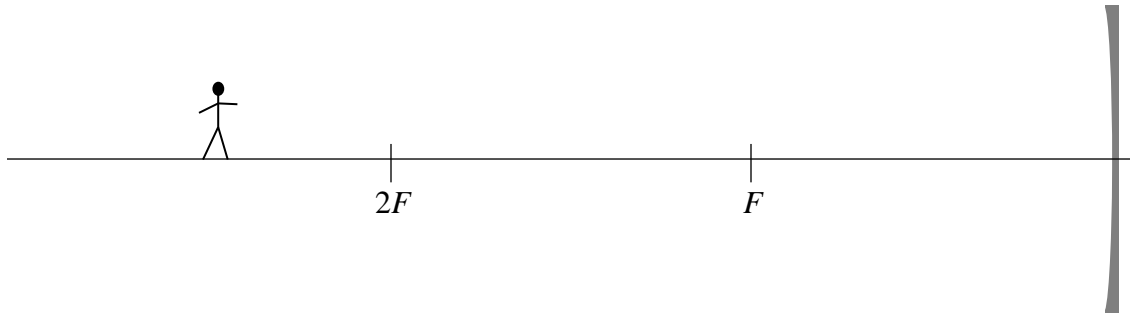


Ray Tracing - Mirrors

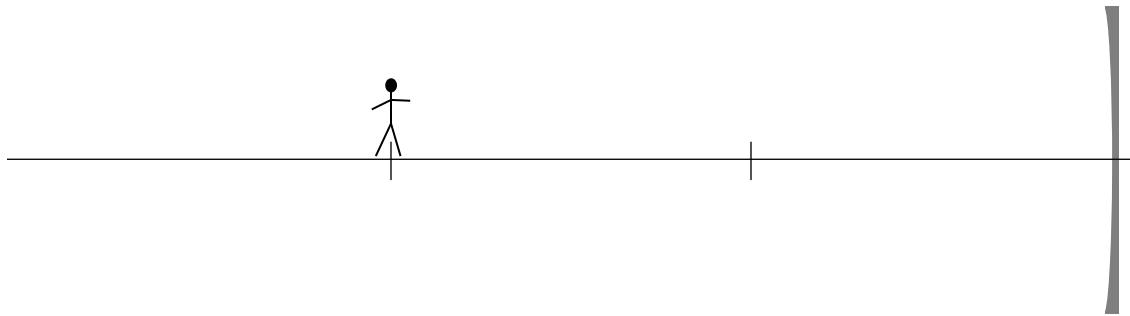
Complete each diagram by drawing rays to locate and sketch the image. For *any* mirror the following rays may be readily drawn: parallel to axis reflects through focal point, through focal point reflects parallel to axis. For *spherical* mirrors a ray through the center reflects through the center of the sphere (for parabolic mirrors this idea still works – but now through a point at twice the focal length instead of the center of a sphere).

Determine the image distance, image height, magnification, and image type – both by diagram and by formulas. Also label mirror as converging or diverging, concave or convex.

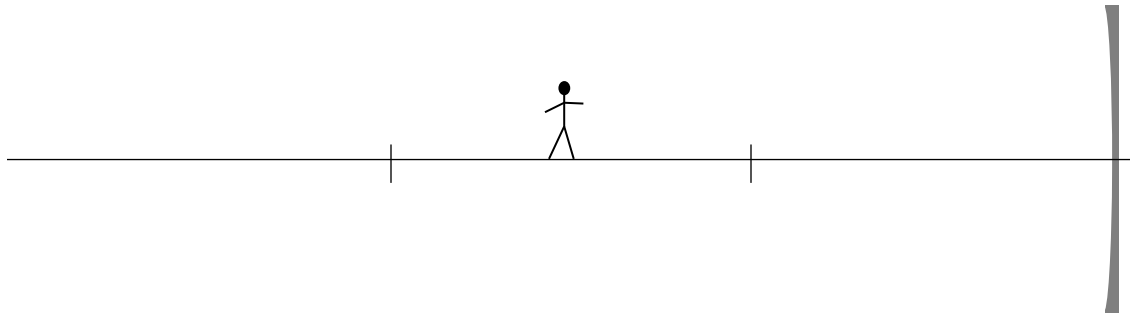
1.



2.



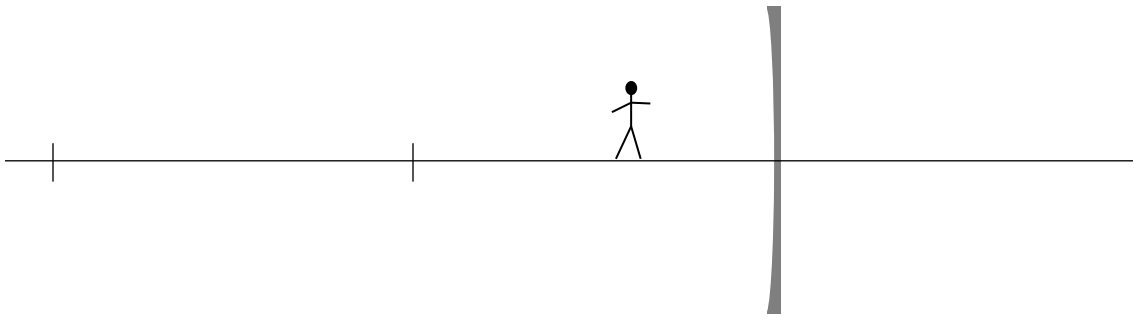
3.



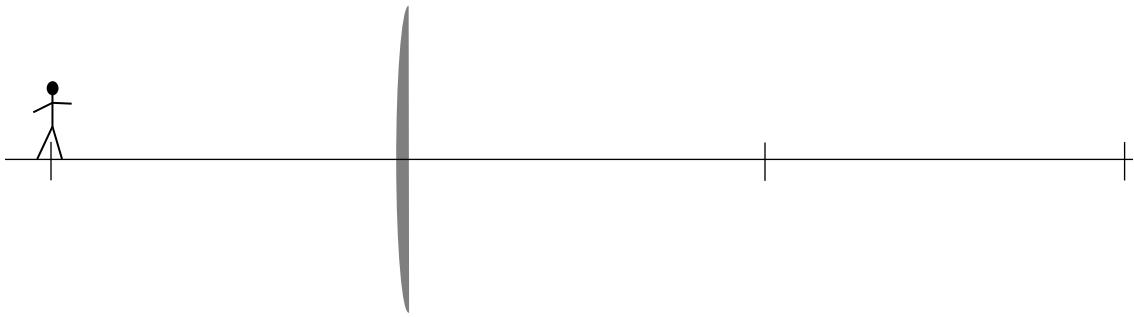
4.



5.



6.



7.

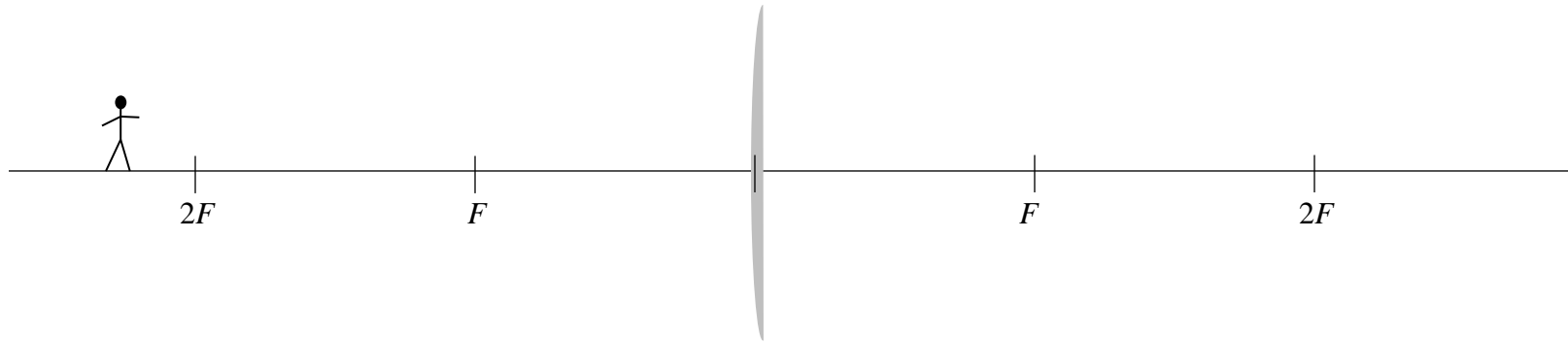


Ray Tracing - Lenses

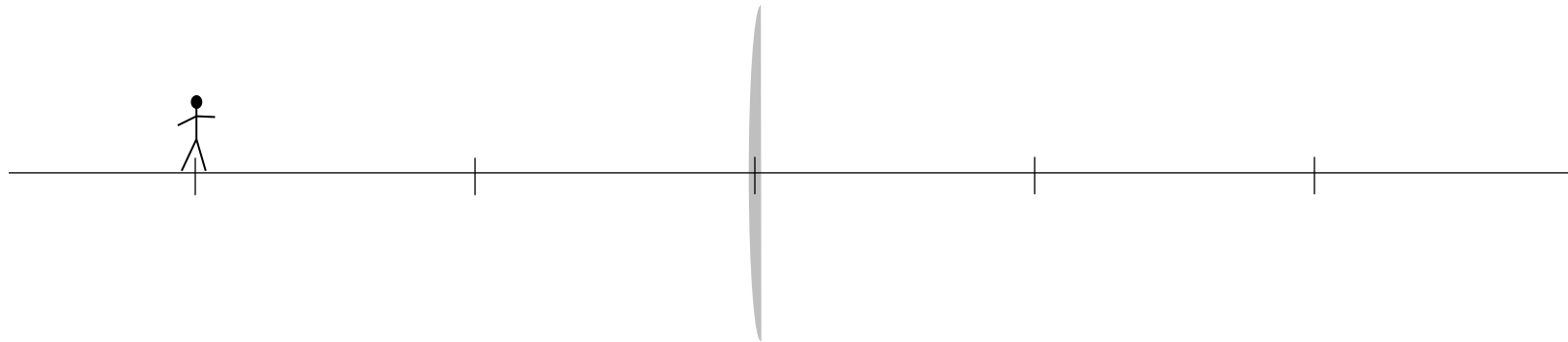
Complete each diagram by drawing rays to locate and sketch the image. For *any* lens the following rays may be readily drawn: parallel to axis passes through one focal point, through the other focal point emerges parallel to axis. And a ray passing through the center of the lens is undeflected, continuing on in the same direction.

Determine the image distance, image height, magnification, and image type – both by diagram and by formulas. Also label lens as converging or diverging, concave or convex.

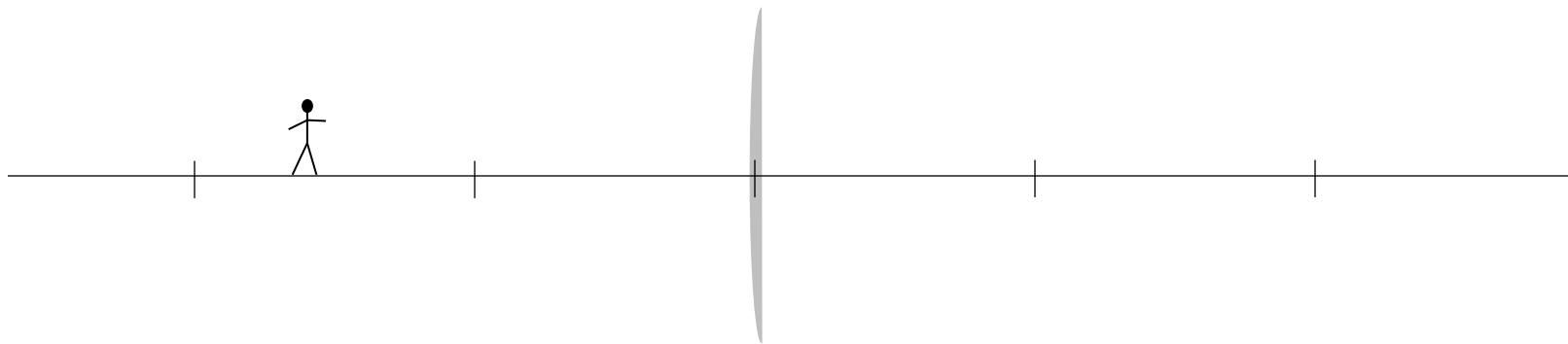
1.



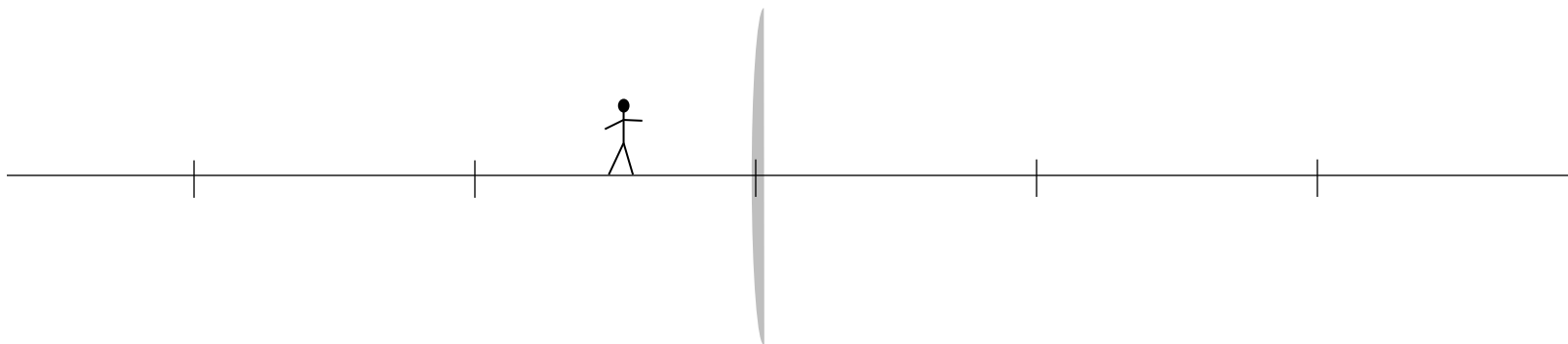
2.



3.



4.



5.

