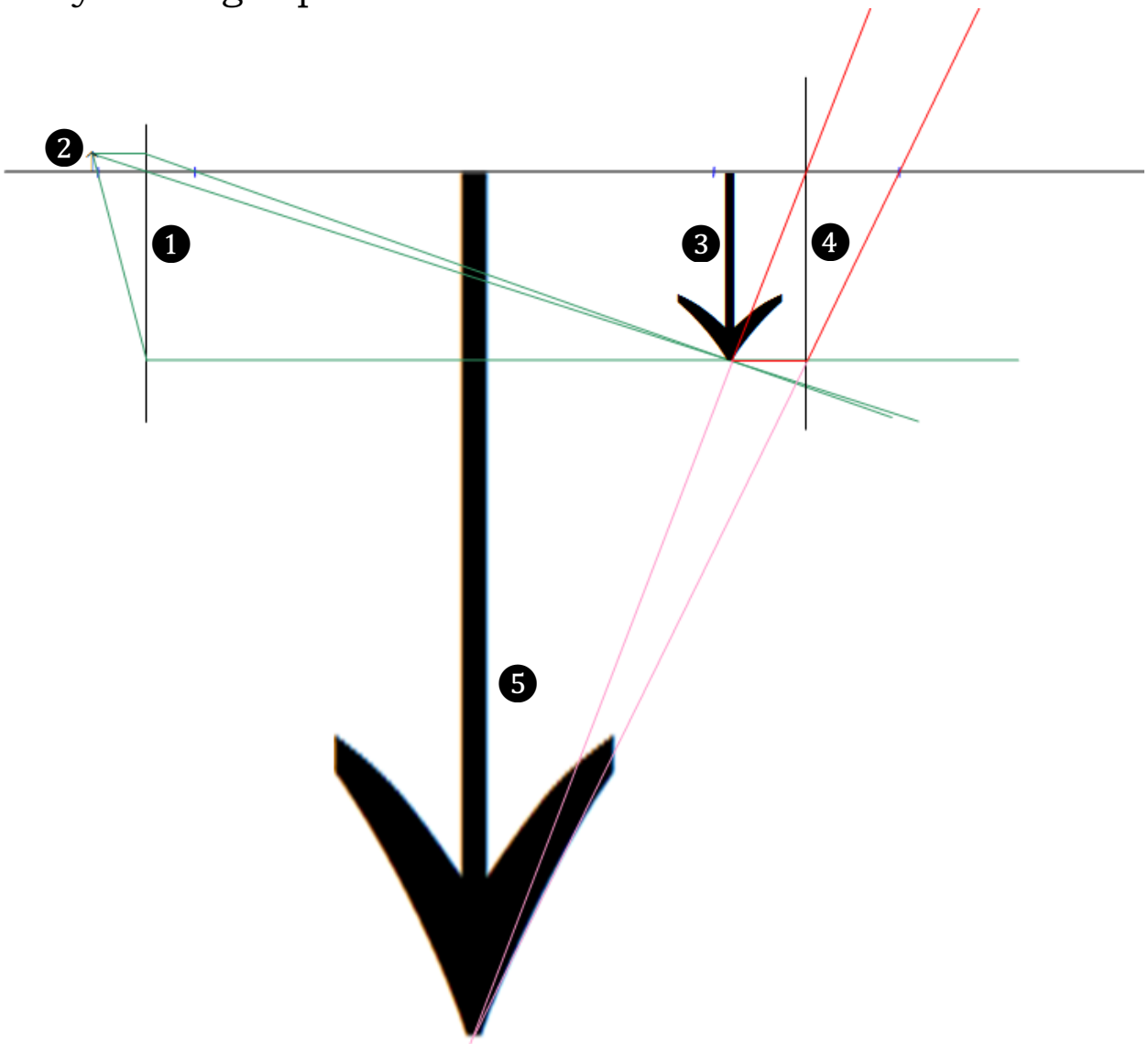
Microscopes: How They Work
a ray-tracing explanation



The objective lens ❶ has a short focal length. The object ❷ is placed close to, but **outside**, the focal point. This creates a **real**, upside-down, magnified image of the object ❸.

This so-called "prime-focus" image ❸ becomes the object for a second converging lens, the eyepiece ❹. The prime-focus image is placed just **inside** the focal point of the eyepiece. The rays go through the lens, but are still diverging when they exit. The eyepiece is being used as a magnifying glass. Tracing back the rays, we find the location that they *appear* to be coming from, the **virtual** image ❺. This image is much bigger than the original object.

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