



2<sup>nd</sup> Edition

# Ray Diagrams for **Mirrors**

Student Worksheets

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by Robert Prior

Series P



## Ray Diagrams for **Mirrors**

Drawing ray diagrams is a skill used in many branches of optics. As with any skill, practice makes perfect. This booklet contains many practice diagrams so you can become perfect.

Although there are an infinite number of light rays, you only need to draw three rays to locate the image.

For clarity, draw each ray in a different colour. This booklet uses **red** for rays through the vertex, **green** for rays parallel to the principal axis, **blue** for rays through the focus, and **yellow** for rays through the centre of curvature.

Real rays, which represent the path followed by a beam of light, are drawn as solid lines:



Virtual rays, which represent the path that a beam of light appears to follow, are drawn as dashed lines:



*Always **use a ruler** and draw your lines carefully! A small mistake in a line can lead to a big mistake in an image.*



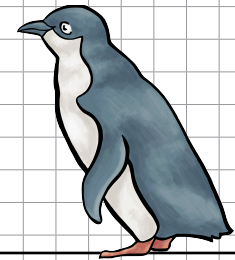
Engraving on the title page of the **Thesaurus opticus**

## Instructions

Label the following:

- centre of curvature
- focus
- mirror
- object
- principal axis
- vertex

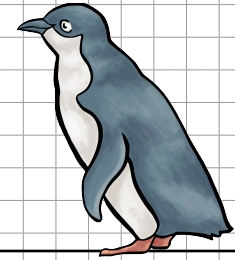
31

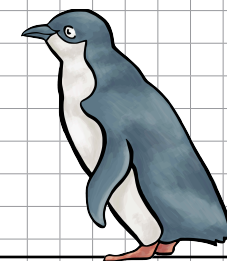


## Instructions

Label the following:

- centre of curvature
- focus
- mirror
- object
- principal axis
- vertex





## Instructions

**Locate** and **describe** the image:

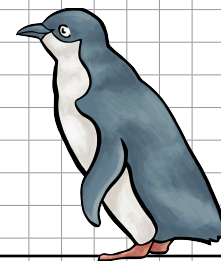
S \_\_\_\_\_

A \_\_\_\_\_

L \_\_\_\_\_

T \_\_\_\_\_

34



## Instructions

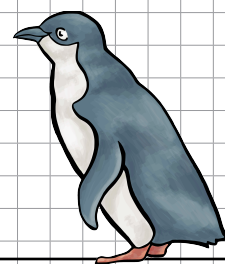
**Locate** and **describe** the image:

S \_\_\_\_\_

A \_\_\_\_\_

L \_\_\_\_\_

T \_\_\_\_\_



## Instructions

**Locate** and **describe** the image:

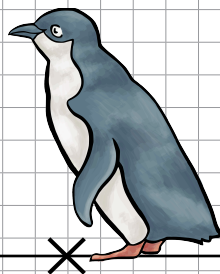
S \_\_\_\_\_

A \_\_\_\_\_

L \_\_\_\_\_

T \_\_\_\_\_

36



## Instructions

**Locate** and **describe** the image:

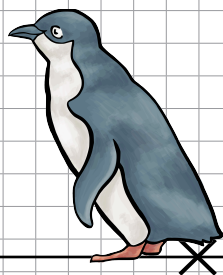
S \_\_\_\_\_

A \_\_\_\_\_

L \_\_\_\_\_

T \_\_\_\_\_





## Instructions

**Locate** and **describe** the image:

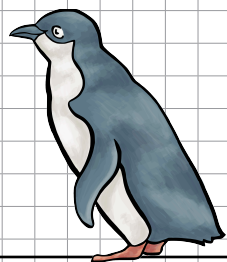
S \_\_\_\_\_

A \_\_\_\_\_

L \_\_\_\_\_

T \_\_\_\_\_

38



## Instructions

**Locate** and **describe** the image:

S \_\_\_\_\_

A \_\_\_\_\_

L \_\_\_\_\_

T \_\_\_\_\_

## Instructions

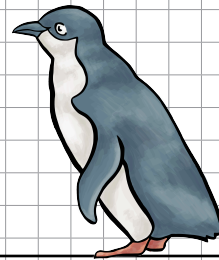
**Locate** and **describe** the image:

S \_\_\_\_\_

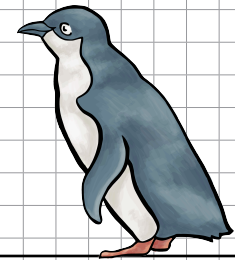
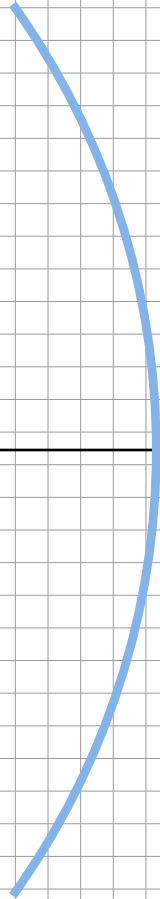
A \_\_\_\_\_

L \_\_\_\_\_

T \_\_\_\_\_



40



## Instructions

**Locate** and **describe** the image:

S \_\_\_\_\_

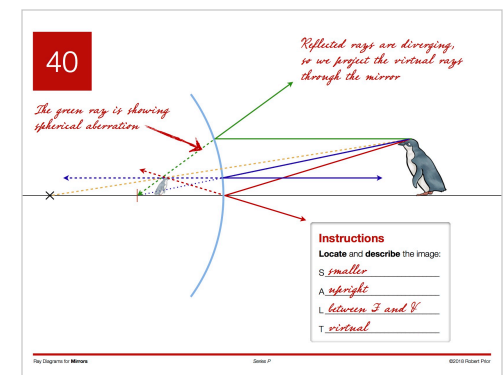
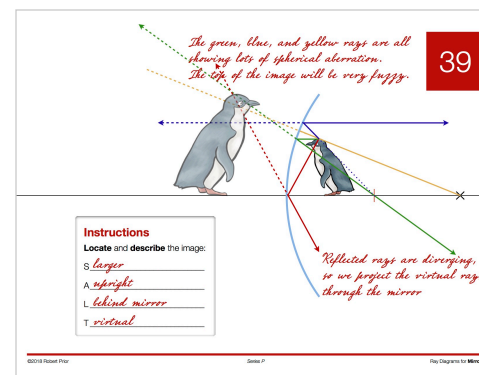
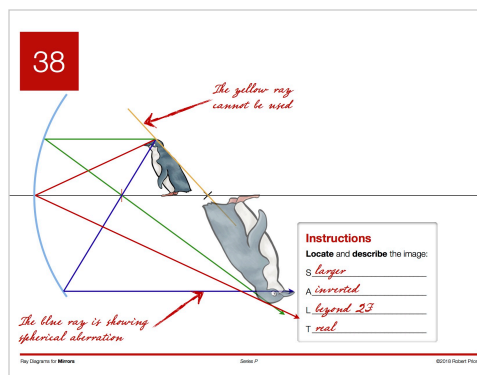
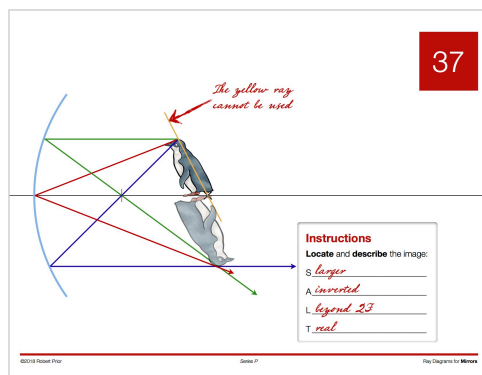
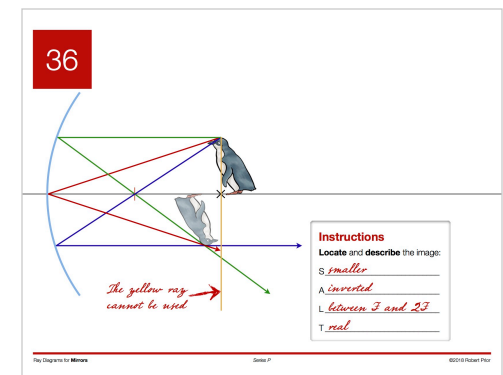
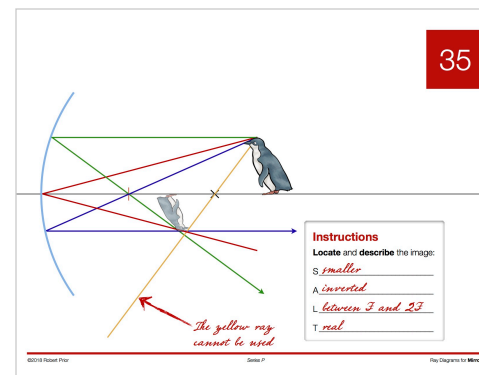
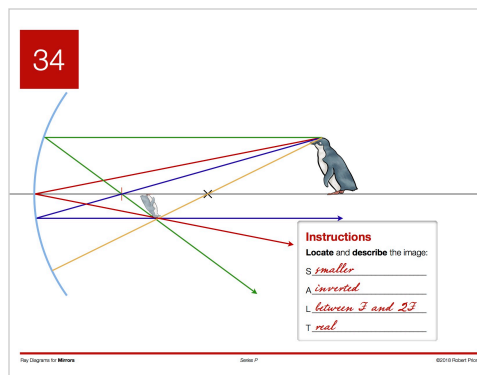
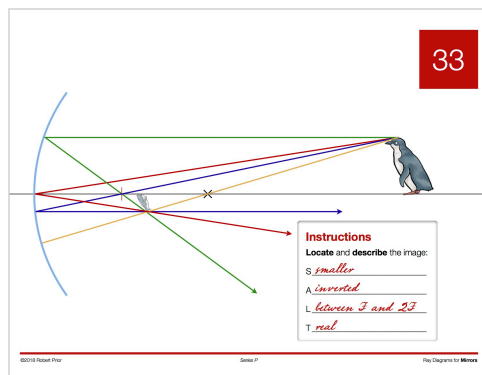
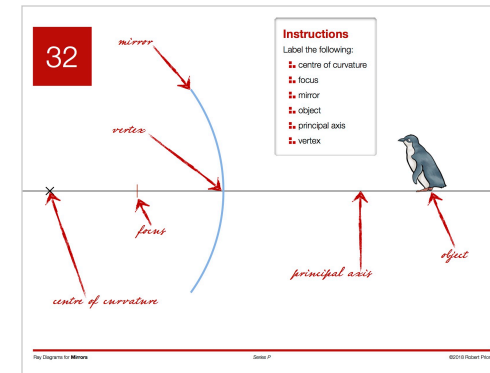
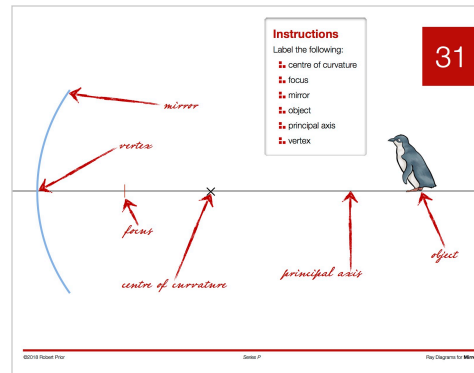
A \_\_\_\_\_

L \_\_\_\_\_

T \_\_\_\_\_

# Solutions

After you have finished some practice, check your answers.





Music is the arithmetic of sounds  
as optics is the geometry of light.

*Claude Debussy*

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