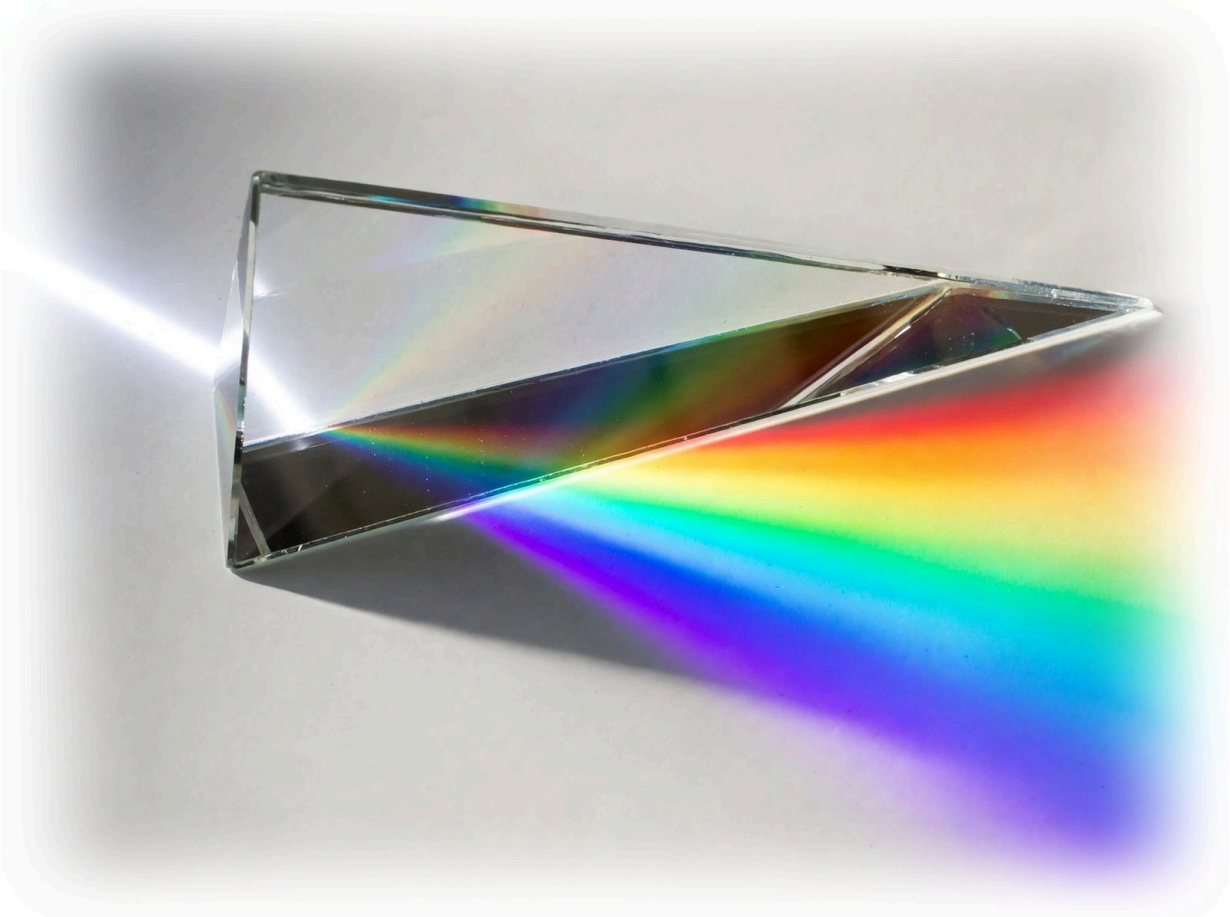
QUEBEC PHYSICS, SECONDARY V · UNIT D

# Geometric Optics — Practice Test

**Quebec Physics, Secondary V • 25 questions**

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

**1** **A light ray passes from air into a glass prism. The sine of the angle of incidence is 0.8 and the sine of the angle of refraction is 0.5. The index of refraction of the glass is**



ANSWER

Understand It with Pulse | Flag a mistake

2 **A light ray strikes a plane mirror at an angle of incidence of 30 degrees. Its angle of reflection, in degrees, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **An object is 30 centimetres from a mirror and its image is 15 centimetres from the mirror. The magnification, with sign from negative image distance over object distance, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **An object is 30 centimetres from a mirror of focal length 10 centimetres. Its image distance, in centimetres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **A wristwatch of height 4 centimetres is 30 centimetres from a mirror and its image is 15 centimetres from the mirror. The image height, in centimetres, is**



ANSWER

Understand It with Pulse | Flag a mistake

6 **A concave mirror can form a real inverted image when the object is beyond the**

- A mirror surface
- B centre of curvature only
- C focal point
- D lens

Understand It with Pulse | Flag a mistake

7 **A converging lens is thicker in the middle and can form a real**

- A image
- B shadow
- C echo
- D current

Understand It with Pulse | Flag a mistake

8 **A convex mirror always forms a virtual upright image that is**

A larger

B inverted

C real

D smaller

Understand It with Pulse | Flag a mistake

9 **A diverging lens is thinner in the middle and always forms a virtual upright image that is**

A larger

B smaller

C inverted

D real

Understand It with Pulse | Flag a mistake

**10** **When a magnifying glass forms an image, a negative magnification in the mirror equation indicates an**



A inverted image

B upright image

C virtual image

D larger image

Understand It with Pulse | Flag a mistake

**11** **A plane mirror forms an image that is virtual, upright and the same**

- **A** shape only
- **B** size
- **C** colour only
- **D** brightness only

Understand It with Pulse | Flag a mistake

**12** **A ray of light travels from glass of index 1.5 into air of index 1.0. The ratio of the indices, glass to air, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **A real image can be projected onto a screen while a virtual image**

A cannot

B can always

C can sometimes

D can never be seen

Understand It with Pulse | Flag a mistake

14 **An upright image has a positive magnification in the mirror and lens**

A diagrams only

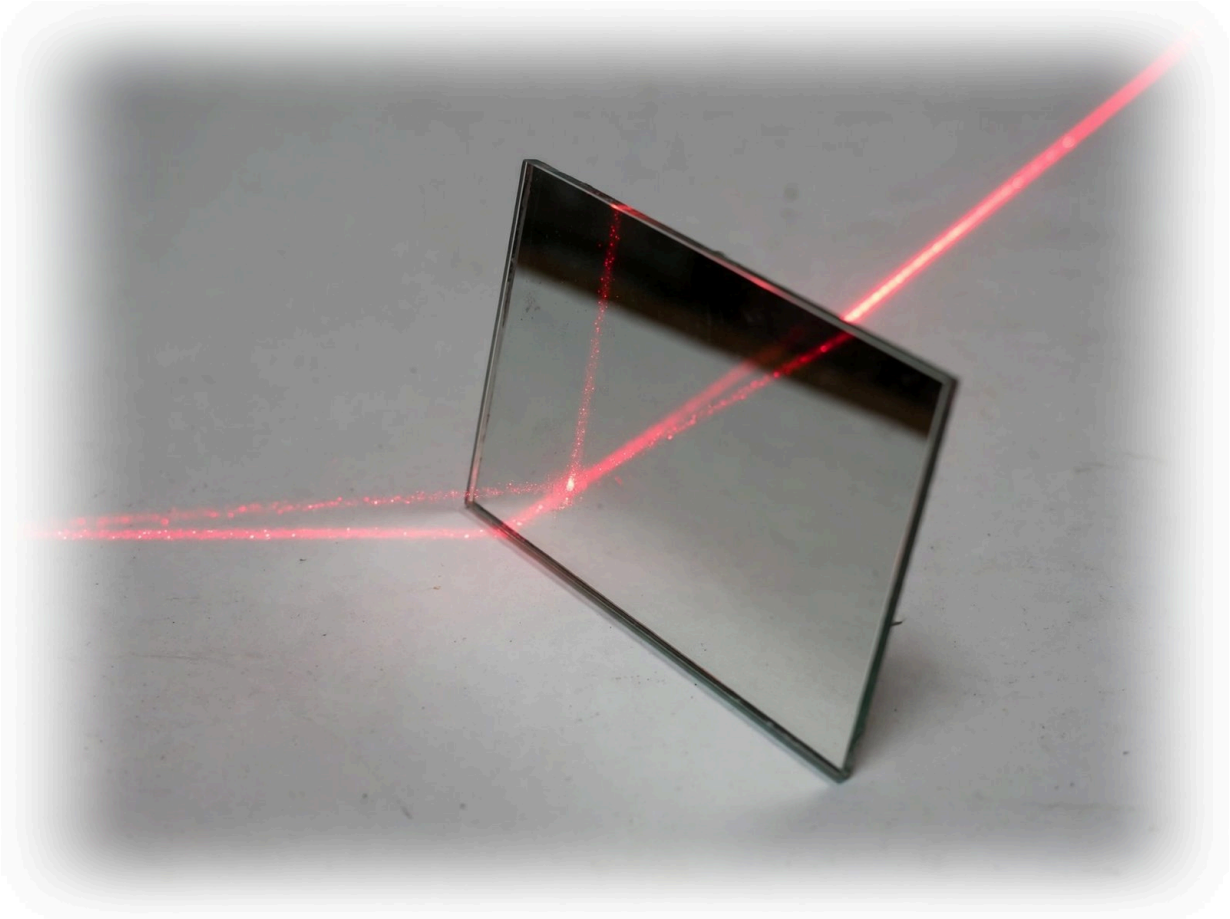
B equations

C tables only

D graphs only

Understand It with Pulse | Flag a mistake

15 **A laser beam strikes a mirror. Angles in reflection and refraction are measured from the**



A surface

B mirror edge

C normal

D ray itself

Understand It with Pulse | Flag a mistake

16 **A light ray passes from air into glass. The sine of the angle of incidence is 0.6 and the sine of the angle of refraction is 0.4. The index of refraction of the glass is**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **A light ray strikes a plane mirror at an angle of incidence of 45 degrees. Its angle of reflection, in degrees, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **An object is 20 centimetres from a mirror and its image is 20 centimetres from the mirror. The magnification, with sign from negative image distance over object distance, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **An object is 20 centimetres from a mirror of focal length 10 centimetres. Its image distance, in centimetres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

**20** **A wooden block of height 6 centimetres is 20 centimetres from a mirror and its image is 20 centimetres from the mirror. The image height, in centimetres, is**



ANSWER

Understand It with Pulse | Flag a mistake

**21** **A light ray passes from air into glass. The sine of the angle of incidence is 0.9 and the sine of the angle of refraction is 0.6. The index of refraction of the glass is**

ANSWER

Understand It with Pulse | Flag a mistake

22 **A light ray strikes a plane mirror at an angle of incidence of 60 degrees. Its angle of reflection, in degrees, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **An object is 60 centimetres from a mirror and its image is 30 centimetres from the mirror. The magnification, with sign from negative image distance over object distance, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

24 **An object is 60 centimetres from a mirror of focal length 20 centimetres. Its image distance, in centimetres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **A red rubber ball of height 8 centimetres is 60 centimetres from a mirror and its image is 30 centimetres from the mirror. The image height, in centimetres, is**



ANSWER

Understand It with Pulse | Flag a mistake

# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | 1.6 | **10.** | A | **19.** | 20 |
| **2.** | 30 | **11.** | B | **20.** | 6 |
| **3.** | -0.5 | **12.** | 1.5 | **21.** | 1.5 |
| **4.** | 15 | **13.** | A | **22.** | 60 |
| **5.** | 2 | **14.** | B | **23.** | -0.5 |
| **6.** | C | **15.** | C | **24.** | 30 |
| **7.** | A | **16.** | 1.5 | **25.** | 4 |
| **8.** | D | **17.** | 45 | | |
| **9.** | B | **18.** | -1 | | |

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