

Reflection

KS3 Physics · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

A ray hits a mirror with an angle of incidence of 30° . Find the angle of reflection.

Step 1 · Law of reflection

Angle of incidence = angle of reflection.

Step 2 · So

The angle of reflection is 30° .

Answer: 30°

Check: Both angles are measured from the normal.

2. Now try one with the steps

A ray hits a mirror at 50° to the mirror's surface. Find the angle of reflection.

Step 1 · Measure from the normal

Step 2 · Law

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. State the law of reflection. [1]

2. What is the 'normal' in a ray diagram? [1]

3. A ray has an angle of incidence of 30° . What is the angle of reflection, in degrees? [1]

4. A ray hits a mirror at 50° to the mirror surface. What is the angle of incidence, in degrees? [1]

5. For the ray in the last question, what is the angle of reflection, in degrees? [1]
-
-
6. The angle of incidence is 35° . What is the angle between the incident ray and the reflected ray, in degrees? [1]
-
-
7. Describe three properties of an image in a plane mirror. [3]
-
-
-
8. You stand 2 m in front of a plane mirror. How far behind the mirror is your image, in metres? [1]
-
-
9. In the last question, how far is your image from you, in metres? [1]
-
-
10. You walk 0.5 m closer to the mirror from 2 m away. How far are you now from your image, in metres? [2]
-
-
11. What is the difference between specular and diffuse reflection? [2]
-
-
12. Why is 'AMBULANCE' written backwards on the front of ambulances? [2]
-
-
13. A ray hits a mirror along the normal. What is the angle of reflection, in degrees, and where does the ray go? [2]
-
-
14. Explain why you can see your reflection in a mirror but not in a sheet of paper, even though both reflect light. [2]
-
-

4. Before you hand it in

Measuring angles from the mirror surface.

Draw the normal at 90° to the mirror and measure both angles from it.

"The image is on the surface of the mirror."

The image is behind the mirror object is in front.

Drawing rays without arrows.

Put an arrow on each ray showing the way the light travels: towards the mirror, then away.