**Physics Mirror Review**

**Use the word bank to complete the fill in the blank. Words may be used more than once or not at all.**

**Center of curvature**

**Concave**

**Converges**

**Convex**

**Curved**

**Diffuse**

**Diverges**

**Focal point**

**Focal**

**Incidence**

**Incident**

**Law of Reflection**

**Plane**

**Radius**

**Real**

**Reflect**

**Reflection**

**Specular**

**Straight**

**Virtual**

1. The three types of mirrors are: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. The two types of spherical mirrors are: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mirror forms both real and virtual images.
4. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mirror curves inward.
5. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mirror curves outward.
6. Point C is known as the \_\_\_\_\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_\_\_\_\_. Therefore, this point is always in front of the curved area of the mirror.
7. The measurement of C is the same as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. The radius of curvature is twice the \_\_\_\_\_\_\_\_\_\_\_ length.
9. F is the \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ of the mirror.
10. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mirror always forms an image that is the same size as the object.
11. An image from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_mirror will always appear smaller than the object.
12. In a Fun House, a mirror that makes you look upside down would have to be a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mirror.
13. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mirror is used for the side mirror on a car.
14. Light rays will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when they hit a mirror.
15. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mirror can produce an image that appears larger than the actual object.
16. The light that approaches the mirror is known as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ray of light.
17. The point in front of the mirror where the reflected rays meet is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ point.
18. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mirror is also known as a converging mirror.
19. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mirror is also known as a diverging mirror.
20. The angle of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is always equal to the angle of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
21. The statement in number 20 is known as The \_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
22. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mirror is used for security purposes in stores.
23. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ image cannot be obtained on a screen/paper.
24. The brain interprets a light wave as traveling in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ line.
25. Only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rays may be extended behind the mirror.
26. If light hits a rough surface, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reflection occurs.
27. If light hits a smooth surface, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reflection occurs.
28. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ image is always upright.
29. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mirror is used by interior decorators to create the illusion of depth.
30. A convex mirror \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ light rays.

**Short Answer**

1. You are given three mirrors of equal size. How can you identify which is the plane, convex and concave mirror?
2. List the four characteristics of an image formed by a plane mirror.
3. Explain how to draw a ray diagram for a concave mirror when the object is placed at C and list the LOST characteristics.
4. Explain how to draw a ray diagram for any convex mirror and the resulting LOST characteristics.
5. Explain how to draw a ray diagram for a concave mirror when the object is in front of f and list the LOST characteristics.
6. An object is located at the focal point of a concave mirror. Describe the image.
7. Why is the distance of a virtual image always a negative value?
8. What does a negative magnification indicate?
9. Explain how to measure the angle of incidence.
10. What items were used as mirrors before modern mirrors were created? Why did these items work?
11. What is the purpose of the glass of a modern mirror? The silver backing?
12. If an object is located 10 cm in front of a plane mirror, the image is located \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
13. If the focal length of a spherical mirror is 6 cm the center of curvature is \_\_\_\_\_\_\_\_\_\_\_\_.

**True or False**

1. A convex mirror always creates virtual images.
2. A plane mirror creates both real and virtual images.
3. An object placed outside of the focal point of a concave mirror forms a real image.
4. An image formed by a convex mirror is magnified.
5. The normal line is drawn parallel to the surface of the mirror.

**Multiple Choice**

1. In the diagram to the right, which letter represents the image of the object?
2. A b. B c. C d. D e. E



1. Which type of mirror is represented by the diagram at the right?
2. Plane b. concave c. convex d. parabolic
3. How can you tell if you are looking into a concave mirror?
4. It curves outward and the images are upright
5. It is curved inward
6. ****You will appear inverted or upright depending on your location
7. Both b and c

**Use the diagram below for questions 4-7**

1. The line OQ is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Incident ray
3. Reflected ray
4. Normal
5. The angle of incidence is given by the angle \_\_\_\_\_\_\_\_\_\_
6. AOP
7. QBO
8. NOQ
9. PON
10. The angle of reflection is given by the angle \_\_\_\_\_\_\_\_\_\_\_\_.
11. AOP
12. QBO
13. NOQ
14. PON
15. The line ON is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. Incident ray
17. Reflected ray
18. Normal

**Drawing Ray Diagrams**

 Draw the following situations. List the LOST for each image.

1. 1.0 cm object located 4 cm in front of a converging mirror that has a radius of 6 cm.
2. 1.0 cm object located 3 cm in front of a convex mirror that has a focal length of 2 cm.

**Problems**

1. A Star Wars action figure, 8.0 cm tall, is placed 30.0 cm in front of a concave mirror with a focal length of 10.0 cm.
2. Where is the image located?
3. How tall is the image?
4. What are the characteristics of the image?
5. The same Star Wars action figure, 8.0 cm tall, is placed 6.0 cm in front of a convex mirror with a focal length of -12.0 cm.
6. Where is the image located?
7. What is the magnification?
8. What are the image characteristics?
9. A 4.00-cm tall light bulb is placed a distance of 45.7 cm from a concave mirror having a focal length of 15.2 cm. Determine the image distance and the image size.
10. Light is incident on a flat surface, making an angle of 10o with that surface. What is the angle of reflection?