HONORS PHYSICS (RED)

Unit 1 Lesson 3: Reflection of Light

1. I can explain the behavior of light in reflection and relate it to the previously studied behavior of waves.
2. I can explain that light does not need a medium for transmission.
3. I can describe the difference between regular and diffuse reflection.
4. I can show that the Law of Reflection applies to light waves and apply that knowledge to construct an image of an object in a plane mirror.
5. I can explain how the Law of Reflection determines the types of images that occur in curved mirrors.
6. I can predict mathematically the location and size of an image in a curved mirror.

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| ACTIVITY | TIME ALLOTMENT |
| Outside Reading Reference: Chapter 17: p. 393-394,  Chapter 18: p. 415-428. | HW |
| Reflection and Mirrors Lab | 1 |
| Light Waves: Reflection & Images  Reflections and Images – Part C | 2  HW |
| **HW – BOOK;** p. 410; 1-3, 16, 31.  p. 439; 1-9, 13-20, 25-34 | HW |
| **HW -** Mirror Problem Worksheet | HW |
| Curved Mirror Lab | 2 |
| Review | 1 |
| **TEST** | 1 |
| TOTAL | 7 |

56. A dedicated sports-car enthusiast polishes the inside and outside surfaces of a hubcap that is a section of a sphere. When he looks into one side of the hubcap, he sees an image of his face 30.0 cm behind the hubcap. He then turns the hubcap over and sees another image of his face 10.0 cm behind the hubcap.

1. How far is his face from the hubcap?
2. What is the radius of curvature of the hubcap?
3. What is the magnification for each image?
4. Are the images real or virtual?
5. Are the images upright or inverted?

Pg. 410

31. a. 53o b. 106o

Pg. 439

25. 2.4 m

26. 20.0 cm

27. 75 cm

28. 3.0e1 cm; -1.8 cm

29. a. -24 cm b. 9.0 cm

30. 5

31. drawings

32. a. b. 4.0 cm c. -8.0 mm

33. a. b. 32 mm

34. -9.4 cm; 0.75 cm

Mirror Problems WS

1. -3.2 ft.
2. -3.75 m behind; virtual
3. -42 cm behind; virtual
4. -9 cm; convex; 1 cm upright
5. 18 cm, -2.5 cm

Curved Mirrors Practice

1. S
2. R
3. P
4. M
5. W
6. Object 3 (convex), Object 5 (concave in front of f )
7. Plane – always ; Concave – when object at C ; Convex – when object touches mirror surface
8. Plane and Convex – always upright Concave – Object between F and mirror
9. Only Concave can produce real image – only if object further than F from mirror
10. Convex only – image upright and smaller (concave- if image upright it is enlarged, Plane – image same size)

Mirror Equation Problems

1. di = 22.5 cm hi = - 2.5 cm
2. di = 30 cm hi = - 5 cm
3. di = 60 cm hi = - 15 cm
4. di = -30 cm hi = 15 cm
5. di = 19.2 cm Must be real, all inverted are real
6. di = 44 cm f = 14.7 cm Must be real, all inverted are real
7. di = - 8.1 cm
8. f = -36.6 cm
9. di = - 8.1 cm hi = 0.909 cm
10. di = -7.5 cm