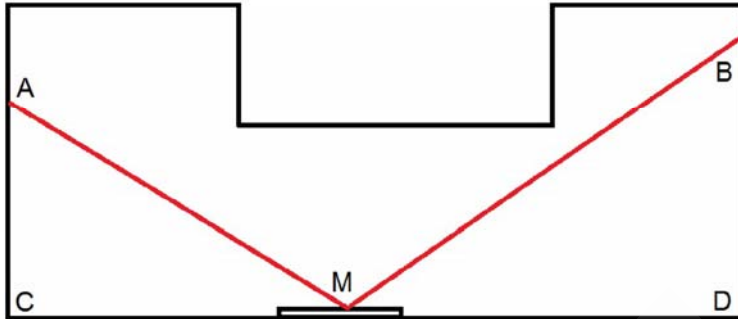**Angle of incidence and reflection**

Numeric Response

1.

The picture above shows the floor layout of the local Shop-O-Rama and might not be drawn to scale. Point A has a laser generator, point B has a receiver, and point M is where there is a mirror. The distance from point A to C is 300 inches, from point C to M is 28 feet, from point M to D is 36 feet, and the angle of incidence and angle of reflection are congruent. What is the distance from point D to point B to the nearest inch?
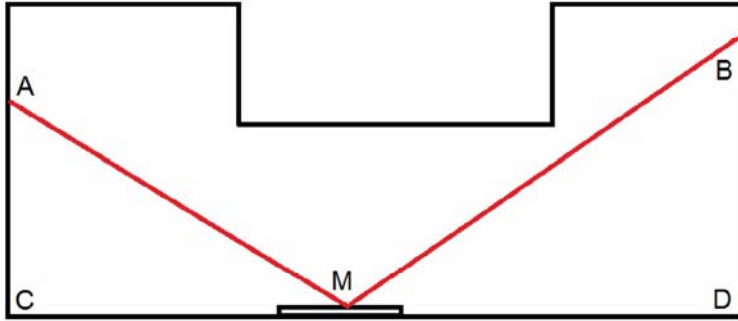

2.

The picture above shows Johnny making a bounce pass of the ball to a taller player, Sally, and might not be drawn to scale. Johnny is passing the ball from a height of 38 inches, hits the floor 76 inches away from him, and Sally will catch the ball at a height of 55 inches. The ball bounce has an angle of incidence and angle of reflection that are congruent. How far apart are Johnny and Sally to the nearest inch?

3.
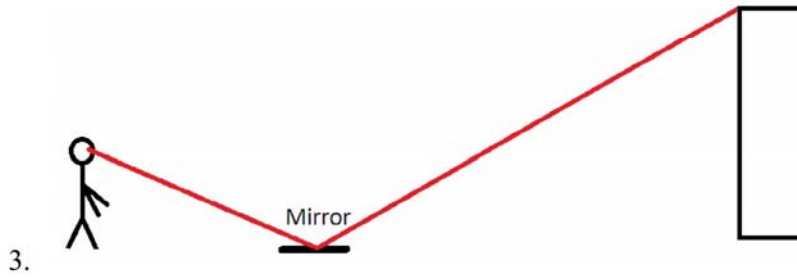
The picture above shows Billy looking at a mirror where he can see the top of a building. Billy's eyes are 58 inches above the ground, the reflection point on the mirror is 40 feet away from the building, and the building is 16 feet tall. How far away is Billy's eye from the reflection point on the mirror to the nearest inch?

4.
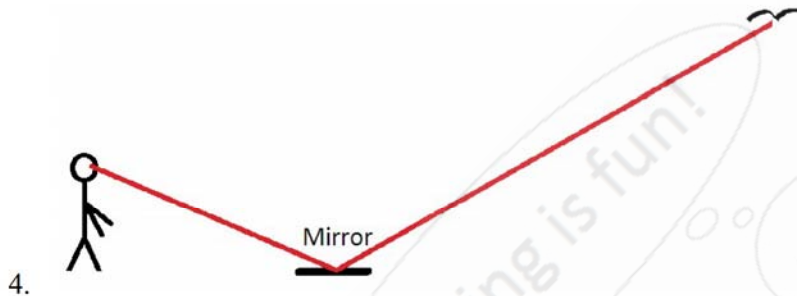
The picture above shows Billy looking at a mirror where he can see a bird flying in the sky. Billy's eyes are 65 inches above the ground, the reflection point on the mirror is 42 feet away from the bird, and the reflection point is 17 feet away from Billy's eye. How far above the ground is the bird flying to the nearest inch?

5.

The picture above shows the floor layout of the local Shop-O-Rama and might not be drawn to scale. Point A has a laser generator, point B has a receiver, and point M is where there is a mirror. The distance from point A to C is 203 inches, from point C to M is 30 feet, from point M to D is 36 feet, and the angle of incidence and angle of reflection are congruent. What is the distance from point D to point B to the nearest inch?


6.

The picture above shows Johnny making a bounce pass of the ball to a taller player, Sally, and might not be drawn to scale. Johnny is passing the ball from a height of 29 inches, hits the floor 58 inches away from him, and Sally will catch the ball at a height of 54 inches. The ball bounce has an angle of incidence and angle of reflection that are congruent. How far apart are Johnny and Sally to the nearest inch?

7.
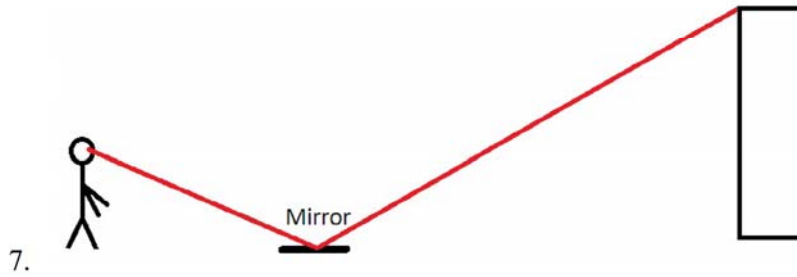
The picture above shows Billy looking at a mirror where he can see the top of a building. Billy's eyes are 62 inches above the ground, the reflection point on the mirror is 38 feet away from the building, and the building is 13 feet tall. How far away is Billy's eye from the reflection point on the mirror to the nearest inch?

8.
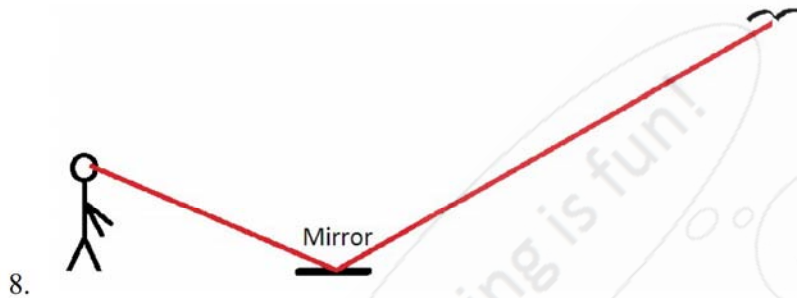
The picture above shows Billy looking at a mirror where he can see a bird flying in the sky. Billy's eyes are 61 inches above the ground, the reflection point on the mirror is 47 feet away from the bird, and the reflection point is 19 feet away from Billy's eye. How far above the ground is the bird flying to the nearest inch?

Angle of incidence and reflection
Answer Section

NUMERIC RESPONSE

1. ANS: 386
2. ANS: 186
3. ANS: 145
4. ANS: 161
5. ANS: 244
6. ANS: 166
7. ANS: 181
8. ANS: 151