



8-40. The reflections are all congruent triangles with equal area. Therefore, the total area is $(6)(11.42) = 68.52$ square inches.

8-41. See below:

- a. 1.04
- b. $f(t) = 135000(1.04)^t$
- c. $\approx \$199,833$

8-42. See below:

- a. Non-convex
- b. Convex
- c. Convex
- d. Non-convex

8-43. See below:

- a. 64 units²
- b. ≈ 27.0 units²
- c. $8\sqrt{3} \approx 13.9$ units²

8-44. See below:

- a. 3
- b. 15
- c. 4
- d. 9

8-45. Students may remember from problem 3-55 that all circles are similar or they may use similarity transformations to justify the similarity.

8-46. See below:

a. $A = 192 \text{ cm}^2$, $P = 70 \text{ cm}$

b. The length of each side is 5 times the corresponding side in the floor plan. $A = 4,800 \text{ cm}^2$ and $P = 350 \text{ cm}$.

$$\frac{5}{1}$$

c. The ratio is $\frac{5}{1} = 5$; the ratio of the perimeters equals the zoom factor.

d. The ratio of the areas is $\frac{25}{1} = 25$. The ratio of the areas equals the square of the zoom factor (5^2).