13. On a particular map, 1 inch represents an actual distance of 2.5 miles. The actual area of a lake is 12 square miles. Find the area of the lake on the map. $1.92 \text{ in}^2$

14. On the map, the area of a nature preserve is 54.2 square inches. If the scale of the map is 1 inch : 8 miles, find the actual area of the nature preserve. $3,468.8 \text{ mi}^2$

15. The map shows two roads labeled A and B.
   a) Using a ruler, measure, in centimeters, the lengths of roads A and B.
      Road A = 2.4 cm; Road B = 3.3 cm
   b) Using the scale given, find, in kilometers, the actual lengths of roads A and B.
      Road A = 1.2 km; Road B = 1.65 km

\[
\begin{align*}
\text{A:} & \quad \frac{1}{50,000} \times 2.4 \times 2.4 \\
& \quad \frac{cm}{50,000} \times 2.4 \\
& \quad x = 2.4(50,000) \\
& \quad x = \frac{cm}{10 \text{ km}}
\end{align*}
\]
The map shows seven cities in Florida. Using the scale on the map, use a ruler to measure the distance between the following pairs of cities. Then find the actual distance between them in miles.

a) Orlando and West Palm Beach 150 mi
b) Fort Myers and Miami Beach 125 mi

\[ \frac{0.8 \text{ cm}}{50 \text{ mi}} \]

\[ \frac{2.4 \text{ cm}}{} \]

\[ \frac{50 \text{ mi}}{0.8 \text{ cm}} \times \frac{3}{50} = \frac{2.4}{150} \text{ mi} \]
17 Use the scale on the floor plan of a house to find each of the following.

a) The actual length and width of room 1. Length = 4.5 m; Width = 3.5 m
b) The width of the door on the floor plan if its actual width is 0.8 meter. 0.32 cm
c) The actual area of the floor of the house to the nearest square meter. About 142 m² to 144 m²

![Floor plan diagram]

\[ L = 1.9 \text{ cm} \quad W = 1.4 \text{ cm} \]

\[ \frac{6.5 \times 3.5}{22.75 \div 6.25} = 142.25 \text{ m}^2 \]

18 A tower is drawn using a scale of 1 inch : 3 feet. The height of the tower in the drawing is 1 foot 5 inches. Then, an architect decides to make a new scale drawing of the tower. In the new scale, the scale is 1 inch : 5 feet. Find the height of the tower in the new drawing. 10.2 in.

\[ \frac{1 \text{ in}}{3 \text{ ft}} = \frac{17 \text{ in}}{x} \]
\[ x = 3 \times 17 \]
\[ x = 51 \text{ in} \]

\[ 51 \div 5 = 10.2 \text{ in} \]
19 Each student walked in a straight line from one point to another. Use a centimeter ruler to measure distances on the map shown. Use the scale on the map to find the distance each student walked in meters.

<table>
<thead>
<tr>
<th>Scale</th>
<th>1 : 12,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legend</td>
<td></td>
</tr>
<tr>
<td>A: School</td>
<td>B: Gym</td>
</tr>
<tr>
<td>C: Restaurant</td>
<td>D: Library</td>
</tr>
<tr>
<td>E: Movie theater</td>
<td>F: Motel</td>
</tr>
</tbody>
</table>

- Ethan walked from the library to the school, and then to the gym. **637.5 m**
- Joshua walked from the motel to the restaurant, and then to the movie theater. **612.5 m**
- Chloe walked from the gym to the motel, and then to the movie theater. **662.5 m**