Using Similar Figures

For each pair of similar figures write a proportion containing the unknown length. Then solve.

1. \[
\frac{12 \text{ ft}}{13 \text{ ft}} = \frac{5 \text{ ft}}{x} = \frac{10 \text{ ft}}{y}
\]

2. \[
\frac{4 \text{ cm}}{7 \text{ cm}} = \frac{6 \text{ cm}}{x} = \frac{12 \text{ cm}}{14 \text{ cm}}
\]

3. \[
\frac{12 \text{ in.}}{16 \text{ in.}} = \frac{x}{24 \text{ in.}} = \frac{y}{20 \text{ in.}}
\]

4. \[
\frac{15 \text{ m}}{18 \text{ m}} = \frac{10 \text{ m}}{x} = \frac{12 \text{ m}}{6 \text{ m}}
\]

5. Kareem and Julio have rectangular model train layouts that are similar to each other. Julio’s layout is 4 feet by 7 feet. Kareem’s layout is 6 feet wide. What is the length of Kareem’s layout?

6. A 6-foot-tall adult casts a shadow that is 15 feet long. Estimate the height of a child who casts a 10-foot shadow.