Many real world problems involve ratios. This often involves **making two ratios equal to each other**. When we do this, we are creating a **proportion**. The following examples illustrate.

**e.g.** Solve the following proportions for the missing value (the letter) :

a) \( 5 : x = 40 : 56 \)  
b) \( 49 : 35 = 14 : n \)

**e.g.** At right is a photo of a father and his daughter. In the photo, the father’s height is 8 cm and the daughter’s height is 6 cm. In real life, the father is 1.8 m tall. How tall is the daughter?

**e.g.** When a bike is in fourth gear, the ratio of pedal turns to rear wheel turns is 3:7. When the pedal turns twice, how many times does the rear wheel turn?

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