

**Example 5** One third of Ken's cousins attend his hockey game. Eight of his cousins attend the game. Use the equation  $\frac{x}{3} = 8$  to answer the following questions.

a) Solve for  $x$ .

$$\frac{x}{3} = 8$$

$$\frac{x}{3} = 8 \times 3$$

$$x = \underline{24}$$

b) What does  $x$  represent in this problem?

Total number of cousins

**Example 6** The following formula gives the ideal amount of sleep needed each night by people 19 years old or younger.

$$H = \frac{35 - a}{2}$$

Where  $H$  represents the number of hours of sleep and  $a$  represents the age in years.

a) How much sleep does a 14-year-old need?

age = 14

$$\text{Hours of sleep} = \frac{35 - \text{age}}{2}$$

$$\text{Hours} = \frac{35 - 14}{2}$$

$$= \frac{21}{2} \Rightarrow 10.5 \text{ hours of sleep}$$

b) Jasmin is 10. She gets 9 hours of sleep each night. Is this enough?

No, because she needs 10.5 hours of sleep per day.

$$H = \frac{35 - a}{2}$$

$$H = \frac{35 - 10}{2} = \frac{25}{2}$$

= 12.5 hours of sleep. Jasmin needs.