Chapter 8 Lesson 5 Solve Problems Using Equations

Answers

1. The other possible rectangles are 2 m × 48 m, 3 m × 32 m, and 4 m × 24 m because the product of each is also 96 m^2.
2. The equation allowed Kurt to find the missing dimension, given that he already knew the area and the other dimension.
3. The area of the bigger tree is (200 cm × 300 cm) ÷ 2 = 60 000 cm^2 ÷ 2 = 30 000 cm^2, so the two smaller trees will have an area of 30 000 ÷ 2 = 15 000 cm^2 each. The base and height of the smaller trees could be 100 cm and 300 cm, since (100 × 300) ÷ 2 = 15 000.
4. 0.35 m^2 is 0.35 × 10 000 or 3500 cm^2. The equation to find the length is, therefore, 50 × □ = 3500. Since 50 × 70 = 3500, the length must be 70 cm.
5. For example: The area of the first parallelogram is 10 cm × 5 cm = 50 cm^2, so the area of the new one must be 50 cm^2 × 2 = 100 cm^2. Two possibilities for its base and height might be 10 × 10 = 100 cm^2 and 20 × 5 = 100 cm^2.
6. For example: The area of the family rink is 6 m × 7 m = 42 m^2, so the school rink will have an area of 4 × 42 = 168 m^2. Three possible dimensions for this rink would be 6 × 28 m, 7 m × 24 m, and 12 m × 14 m. I would choose the last one because the others are too long and narrow.
7. (□ × 2) + 10 = 992; □ × 2 = 982; 982 ÷ 2 = 491 cards
8. For example: The kitchen has an area of 144 − 120 = 24 m^2, so its dimensions could be 4 m × 6 m or 3 m × 8 m.