Reasoning and Problem Solving
Area of a Parallelogram

Developing

1a. No; the area of the parallelogram is 6cm x 4cm = 24cm², so half the area of the parallelogram is 24cm² ÷ 2 = 12cm², not 24cm².
2a. 4,000 tiles; the area of each tile is 20cm² (5cm x 4cm) and the area of the pool he wants to tile is 80,000cm² (400cm x 200cm). 80,000cm² ÷ 20cm² = 4,000.
3a. No; 21cm² ÷ 7cm = 3cm, not 2cm.

Expected

4a. No; the area of the parallelogram is 12cm x 5.5cm = 66cm², so half the area of the parallelogram is 66cm² ÷ 2 = 33cm², not 60cm².
5a. 400 paving stones; the area of each stone is 150cm² (15cm x 10cm) and the area of the garden he wants to cover is 60,000cm² (400cm x 150cm). 60,000cm² ÷ 150cm² = 400.
6a. No; 60cm² ÷ 24cm = 2.5cm, not 2cm.

Greater Depth

7a. No; the area of the parallelogram is 15m x 6.2m = 93m², so half the area of the parallelogram is 93m² ÷ 2 = 46.5m², not 46m².
8a. 200 patches; the area of each patch is 52cm² (8cm x 6.5m) and the area of the quilt she is creating is 10,400cm² (800cm x 13cm). 10,400cm² ÷ 52cm² = 200.
9a. No; 75cm ÷ 15cm = 5cm (which is 50mm, not 500mm).

Reasoning and Problem Solving
Area of a Parallelogram

Developing

1b. Yes; the area of the parallelogram is 8cm x 5cm = 40cm², so half the area of the parallelogram is 40cm² ÷ 2 = 20cm².
2b. 2,000 tiles; the area of each tile is 30cm² (6cm x 5cm) and the area of the floor he wants to cover is 60,000cm² (300cm x 200cm). 60,000cm² ÷ 30cm² = 2,000.
3b. Yes; 36cm² ÷ 6cm = 6cm.

Expected

4b. No; the area of the parallelogram is 16cm x 0.45cm = 72cm², so half the area of the parallelogram is 72cm² ÷ 2 = 36cm², not 36mm².
5b. 250 tiles; the area of each tile is 500cm² (25cm x 20cm) and the area of the bathroom he wants to tile is 125,000cm² (500cm x 250cm). 125,000cm² ÷ 500cm² = 250.
6b. No; 55cm² ÷ 10cm = 5.5cm, not 5cm.

Greater Depth

7b. Yes; the area of the parallelogram is 25m x 4.4m = 110m², so half the area of the parallelogram is 110m² ÷ 2 = 55m².
8b. 200 paving stones; the area of each stone is 40.5cm² (9cm x 4.5cm) and the area of the path he wants to cover is 8,100cm² (90cm x 90cm).
8,100cm² ÷ 40.5cm² = 200.
9b. No; 77cm² ÷ 22cm = 3.5cm (which is 35mm, not 30mm).