Mrs. Gregory & Mrs. Postlethwaite's group – Reasoning and problem solving answers

## Bronze

**1a.** Various answers, for example: 6cm + 6cm + 3cm + 3cm; 7cm + 7cm + 2cm + 2cm
**2a.** 34cm
**3a.** Yes. The opposite sides of the rectangle are always of the same length.

**1b.** Various answers, for example: 8cm + 8cm + 4cm + 4cm; 7cm + 7cm + 5cm + 5cm.
**2b.** 36cm
**3b.** No. Muna must have drawn a square; a rectangle will have two pairs of sides which are different lengths.

## Silver

**4a.** Various answers, for example: 80mm + 40mm + 80mm + 40mm; 120mm + 50mm + 120mm + 50mm.
**5a.** 134mm.
**6a.** Yes. A perimeter which is an odd number cannot be made using whole numbers. Accept 'no' if the children reference decimal numbers.

**4b.** Various answers, for example: 10cm + 10cm + 12cm + 12cm; 15cm + 15cm + 7cm + 7cm.
**5b.** 126cm
**6b.** No. This can be proven with an example such as, 7cm + 7cm + 9cm + 9cm = 32cm.

## Gold

**7a.** Various answers, for example: 50mm + 50mm + 120mm + 120mm; 30mm + 30mm + 90mm + 90mm; 40mm + 40mm + 80mm + 80mm
**8a.** 60cm (each tile is 60mm by 30mm).
**9a.** Yes. The opposite sides in a rectangle must be equal. When added together these will make an even number. Accept 'no' if the children reference decimal numbers.

**7b.** Various answers, for example: 50mm + 50mm + 130mm + 130mm; 40mm + 40mm + 140mm + 140mm; 60mm + 60mm + 120mm + 120mm
**8b.** 40cm (each board is 80mm by 40mm).
**9b.** No. This can be proven with an example such as, 11cm + 11cm + 12cm + 12cm = 46cm.