# Answers and mark guide

| Q | Answer | Working | Marks |
|---|---|---|---|
| 1 | **52.0 cm²** | ½ × 12 × 10 × sin 120° | 3 |
| 2 | **34.6 cm²** | ½ × 8 × 10 × sin 120° | 3 |
| 3 | **37.9 cm²** | ½ × 11 × 9 × sin 130° | 3 |
| 4 | **78.9 cm²** | ½ × 14 × 12 × sin 110° | 3 |
| 5 | **57.2 cm²** | ½ × 12 × 11 × sin 120° | 3 |
| 6 | **56.4 cm²** | ½ab sin C | 3 |
| 7 | **87.0 cm²** | ab sin C | 4 |
| 8 | **48.6°** | sin C = 2 × 30 ÷ (10 × 8) | 4 |
| 9 | **25.5 cm²** | ½ × 7 × 9 × sin 54° | 3 |
| 10 | **43.3 cm²** | ½ × 10 × 10 × sin 60° | 3 |
| 11 | **60°** | sin C = 2A ÷ ab | 4 |
| 12 | **13.0 cm** | 50 = ½ × 12 × x × sin 40° | 5 |
| 13 | **93.5 cm²** | 6 × ½ × 6 × 6 × sin 60° | 5 |
| 14 | **16 cm** | 40 = ½ × 10 × BC × sin 30° | 5 |
| 15 | **31.3 cm²** | Cosine rule for an angle, then ½ab sin C | 6 |
| 16 | **0.368 hectares** | ½ × 80 × 120 × sin 50° ÷ 10 000 | 5 |
| 17 | **9.03 cm²** | Sector − ½r² sin θ | 6 |
| 18 | **Drop a perpendicular of height b sin C to side a; area = ½ × a × b sin C** | Standard proof. | 5 |
| 19 | **30 cm²** | Largest when sin C = 1: ½ × 6 × 10 | 5 |
| 20 | **66.7 cm²** | ½ab sin C | 3 |

**My score: _____ / 81** Questions 1–15 = 57 marks (Foundation focus)