**Self-assessment answers: 11 Geometry of triangles and circles**

**1.** (a) 96 = *r*2 × 0.7

⇒ *r* =  = 16.6 cm (3SF)

(b) Perimeter = 2*r* + 0.7*r* = 44.7 cm (3SF)*[7 marks]*

**2.** (a) By cosine rule, 

= 14.9 cm

⇒ Perimeter = 30.9 cm (3SF)

(b) By sine rule,  = 24.9° (3SF).

(This is not a case of ambiguity, since  is already known to be obtuse.) *[9 marks]*

**3.** (a) Segment perimeter = 8*θ* + 16sin = 9.5

⇒ *θ* = 0.598 (3SF)

(b) Shaded region = 2 × segment area

= *r*2 (*θ* − sin *θ*)

= 2.24 cm2 (3SF) *[14 marks]*