Question	Answer	Marks	AO Element	Notes	Guidance
1	**M2** for $[x =] \frac{17.5}{\tan 48}$ or $[x =] \tan 42 \times 17.5$ **A1** for 15.75.. or 15.76	**3**		**M1** for $\tan 48 = \frac{17.5}{x}$ or $\tan (90 - 48) = \frac{x}{17.5}$	
2	21 600	**5**		**B3** for 168 OR **M2** for $204^2 - 180^2$ or better or **M1** for $[\ldots]^2 + 180^2 = 204^2$ oe **A1** for 96 dep on **M2** **and M1** for $\frac{1}{2}(72 + \textit{their}168) \times 180$ oe If zero scored, then **SC1** for 72×180 alone or as part of total area calculation	
3	9.23 or 9.234 to 9.235	**2**		**M1** for $\sin [38 =] \frac{BC}{15}$ or better	

Question	Answer	Marks	AO Element	Notes	Guidance
4	15.5 or 15.49…	**4**		**M3** for $(5 \times \tan 53)^2 + 14^2$ OR **M2** for $5 \times \tan 53$ or **M1** for $\tan [53 =] \frac{x}{5}$ and **M1** for $14^2 + (theirBD)^2$	
5(a)	Congruent	**1**			
5(b)	37.5 or 37.48 to 37.49	**2**		**M1** for $\cos [ABC =] \frac{7.3}{9.2}$	
6(a)	Complete method shown and evaluated	**2**		**M1** for correct Pythagoras e.g. $120^2 + 126^2 \left[= 174^2\right]$	

Question	Answer	Marks	AO Element	Notes	Guidance
6(b)	18 090 cao	**5**		**B4** for 18 081 to 18 094.1 OR **M2** for $126 \times \tan 53$ or **M1** for $\tan 53 = \frac{x}{126}$ and **M1** for $\frac{1}{2} \times 120 \times 126$ or $\frac{1}{2} \times 126 \times$ *their PS* or $\frac{1}{2} \times 126 \times (120 +$ *their PS*$)$ oe If 0 scored, **SC1** for evidence of rounding *their* answer to 4sf	
7	**M1** for sin [x =] 18 ÷ 30 oe or better **A1** for 36.87 or 36.86…	**2**			
8	119 or 118.7...	**2**		**M1** for $98^2 + 67^2$ or better	

Question	Answer	Marks	AO Element	Notes	Guidance
9	17.4 or 17.39…	**5**		**M2** for $13.6^2 - 7.4^2$ oe or better or **M1** for $7.4^2 + (BD)^2 = 13.6^2$ oe and **M2FT** for $x = \frac{\textit{their } BD}{\sin 41}$ or **M1FT** for $\sin 41 = \frac{\textit{their } BD}{x}$ oe or better or **B1** for stating $\sin 41 = \frac{BD}{x}$ or better	
10(a)	32.9 or 32.86…	**3**		**M2** for $39^2 - 21^2$ or better or **M1** for $x^2 + 21^2 = 39^2$	
10(b)	57.4 or 57.42	**2**		**FT** *their* **(a)** if used in tan or sin for angle at X **M1** for $\cos = \frac{21}{39}$ oe If 0 scored, **SC1** for finding other angle in triangle, possibly with *their* 32.9	

Question	Answer	Marks	AO Element	Notes	Guidance
10(c)	237.4	**1**		**FT** *their* **(b)** + 180	
11	18.2 or 18.24 to 18.25	**3**		**M2** for $23^2 - 14^2$ or better or **M1** for $14^2 + [\ldots]^2 = 23^2$	
					[Total: 42]