Additional Mathematics Exercise 8 Answers

(*Applications of Trigonometry*)

1. $4.71\ \text{cm}^2$
2. (a) 0.8 (b) $70\ \text{cm}^2$
3. $R = 13$ cm, $\theta = 2.42$
4. (a) 53.1° (b) $6.64\ \text{cm}^2$
5. $18.1\ \text{cm}^2$
6. $7\frac{7}{20}$
7. $30°$ or $150°$
8. $\text{B} = 30°$, $b = 11.7$, $c = 17.9$
9. (a) $\text{B} = 29.1°$, $\text{C} = 21.9°$, $c = 3.85$
   (b) $\text{C} = 63.3°$, $\text{B} = 66.7°$, $b = 7.19$ or $\text{C} = 116.7°$, $\text{B} = 13.3°$, $b = 1.81$
   (c) no solution
10. $a = 5.16$, $b = 6.95$, $c = 7.9$
11. –
12. (a) $37.8°$ (b) $37.8°$
13. $A = 95.7°$, $B = 50.7°$, $C = 33.6°$
14. $b = 4.65$, $A = 18.8°$, $B = 50.7°$, $C = 131.2°$.
15. (a) 7.94 cm (b) 5.29 cm
16. 104:83:50
17. $b = 6.44$, $c = 5.44$, area of $\Delta\text{ABC} = 15.2$
18. –
19. 1.35 m
20. –
21. (a) 384 m, $053.2°$ (b) 210 m (c) $71300\ \text{m}^2$
22. $\angle\text{CAB} = 36.9°$, $\angle\text{HBA} = 30°$ (b) 0.650
23. the height of C above the ground = 4.90 m, the height of D above the ground = 2.90 m.
24. –
25. $5.4°$
26. (a) $71.6°$ (b) $95.7°$ (c) $35.9°$
27. (a) $87.7°$ (b) $56.3°$
28. –
29. (a) $\cos\theta = \frac{160 + h^2}{28h}$, $\cos\phi = \frac{2500 - 51\text{h}^2}{700h}$ (b) 15.8
30. (a) $\sqrt{a^2 + 4b^2 + 2\sqrt{2}ab}$ (b) $297.2°$