

## Additional Mathematics Exercise 5 Answers

(Trigonometric Functions)

1. (a)  $90^\circ$  (b)  $286^\circ$
2. (a)  $\pi$  rad. (b)  $\frac{11\pi}{6}$  rad.
3. (a) 2.1 (b) 5.3
4. (a)  $\csc\theta \sec\theta$  (b)  $\csc\theta$  (c)  $\sin\theta \cos\theta$  (d) 1
5. -
6. (a) 3.12 (b) -0.2375
7.  $\sec\theta = \pm \frac{1+u^2}{1-u^2}$ ,  $\csc\theta = \pm \frac{1+u^2}{2u}$
8.  $\pm \frac{\sqrt{2}}{2}$
9. -
10. (a)  $\frac{1}{2}$  (b) 2 (c)  $-\frac{1}{2}$  (d)  $-\sqrt{2}$   
(e)  $-\frac{\sqrt{3}}{2}$  (f)  $-\frac{\sqrt{2}}{2}$  (g) 1 (h)  $-\frac{2\sqrt{3}}{3}$
11. 1
12. (a)  $\tan\theta$  (b)  $\cot\theta$
13.  $-\frac{\sqrt{3}}{2}$
14. (a) 1 (b)  $-\sin^2 A$
15. -
16. (a)  $-3 \leq y \leq 3$  (b)  $-8 \leq y \leq -2$
17. (a) maximum: 5, minimum: 1 (b) maximum: 1, minimum:  $\frac{3}{4}$
18. -
19. -
20.  $a = 3$ ,  $b = \frac{\pi}{6}$ ,  $c = -2$
21.  $30^\circ$ ,  $270^\circ$
22. (a)  $\frac{\pi}{6}$ ,  $\frac{5\pi}{6}$ ,  $\frac{7\pi}{6}$ ,  $\frac{11\pi}{6}$  (b)  $\frac{13\pi}{12}$ ,  $\frac{17\pi}{12}$

23. (a)  $45^\circ, 60^\circ, 120^\circ, 135^\circ, 225^\circ, 240^\circ, 300^\circ, 315^\circ$   
(b)  $63.4^\circ, 243.4^\circ$   
(c)  $26.6^\circ, 135^\circ, 206.6^\circ, 315^\circ$   
(d)  $18^\circ, 162^\circ, 234^\circ, 306^\circ$
24.  $0, \pi, 2\pi$
25.  $\frac{\pi}{10}, \frac{\pi}{2}, \frac{9\pi}{10}, \frac{13\pi}{10}, \frac{17\pi}{10}, \frac{3\pi}{2}$