Answers Chapter 1 Section 1

1. $1/360$
2. between $0°$ and $90°$
3. $90°$
4. between $90°$ and $180°$
5. $180°$
6. greater than $180°$
7. Counterclockwise
8. Clockwise
9. their sum is $90°$
10. their sum is $180°$
11. a. $\theta_c = 55°$ b. $\theta_s = 145°$
12. a. $\theta_c = 18°$ b. $\theta_s = 108°$
13 a. $\theta_c = 45°$ b. $\theta_s = 135°$
14. a. $\theta_c = 84°$ b. $\theta_s = 174°$
15. a. $\theta_c = 90°$ b. $\theta_s = 180°$
16. a $\theta_c = 10°$ b. $\theta_s = 100°$
17. a. $\theta_c = 73°$ b. $\theta_s = 163°$
18. a. $\theta_c = 27°$ b. $\theta_s = 117°$
19. a. $\theta_c = 57°$ b. $\theta_s = 147°$
20. a. $\theta_c = 41°$ b. $\theta_s = 131°$
21. $\theta_s = 68°$
22. $\theta_s = 13°$
23. $\theta_s = 90°$
24. $\theta_s = 45°$
25. $\theta_s = 180°$
26. $\alpha = 45°$ $\beta = 135°$
27. $\alpha = 17°$ $\beta = 73°$
28. $\alpha = 60°$ $\beta = 120°$
29. $\alpha = 52°$ $\beta = 38°$
30. $\alpha = 48°$ $\beta = 77°$ $\gamma = 55°$
31. $\alpha = 22°$ $\beta = 22°$ $\gamma = 150°$ $\delta = 150°$
32. $\theta_1 = 427°$
33. $\theta_1 = 540°$
34. $\theta_1 = 144°$
35. $\theta_1 = 308°$
36. $\theta_1 = 175°$
37. $\theta_1 = 360°$
38. $\theta_1 = 393°$
39. $\theta_1 = 64°$

Note: For the remaining items other valid answers are possible.

40. $\theta_1 = 465°$ $\theta_2 = 825°$ $\theta_3 = -255°$ $\theta_4 = -615°$
41. $\theta_1 = 180°$ $\theta_2 = 540°$ $\theta_3 = -450°$ $\theta_4 = -900°$
42. $\theta_1 = 585°$ $\theta_2 = 945°$ $\theta_3 = -135°$ $\theta_4 = -495°$
43. $\theta_1 = 370°$ $\theta_2 = 730°$ $\theta_3 = -350°$ $\theta_4 = -710°$
44. $(67 \pm 360k)°$
45. $(180 \pm 360k)°$
46. $(-216 \pm 360k)°$
47. $(-52 \pm 360k)°$