1. $40° = 40° \cdot \frac{\pi}{180°}$ rad $= \frac{2\pi}{9}$ rad ≈ 0.698 rad

3. $72° = 72° \cdot \frac{\pi}{180°}$ rad $= \frac{2\pi}{5}$ rad ≈ 1.257 rad

5. $45° = 45° \cdot \frac{\pi}{180°}$ rad $= \frac{\pi}{4}$ rad ≈ 0.785 rad

7. $765° = 765° \cdot \frac{\pi}{180°}$ rad $= \frac{17\pi}{4}$ rad ≈ 13.352 rad

9. $36° = 36° \cdot \frac{\pi}{180°}$ rad $= \frac{\pi}{5}$ rad ≈ 0.628 rad

11. $-\frac{7\pi}{2} = -\frac{7\pi}{2} \cdot \frac{180°}{\pi} = -630°$

13. $2 = 2 \cdot \frac{180°}{\pi} = \frac{360°}{\pi} \approx 114.6°$

15. $\frac{2\pi}{9} = \frac{2\pi}{9} \cdot \frac{180°}{\pi} = 40°$

17. $\frac{\pi}{5} = \frac{\pi}{5} \cdot \frac{180°}{\pi} = 36°$

19. $300°$ is coterminal with: $300° + 360° = 660°$, $300° + 720° = 1020°$, $300° - 360° = -60°$, $300° - 720° = -420°$.

21. $\frac{3\pi}{4}$ is coterminal with: $\frac{3\pi}{4} + 2\pi = \frac{11\pi}{4}$, $\frac{3\pi}{4} + 4\pi = \frac{19\pi}{4}$, $\frac{3\pi}{4} - 2\pi = -\frac{5\pi}{4}$, $\frac{3\pi}{4} - 4\pi = -\frac{13\pi}{4}$.

23. $-\frac{\pi}{4}$ is coterminal with: $-\frac{\pi}{4} + 2\pi = \frac{7\pi}{4}$, $-\frac{\pi}{4} + 4\pi = \frac{15\pi}{4}$, $-\frac{\pi}{4} - 2\pi = -\frac{9\pi}{4}$, $-\frac{\pi}{4} - 4\pi = -\frac{17\pi}{4}$

25. Since $430° - 70° = 360°$, the angles are coterminal.

27. Since $\frac{17\pi}{6} - \frac{5\pi}{6} = \frac{12\pi}{6} = 2\pi$; the angles are coterminal.

29. Since $875° - 155° = 720° = 2 \times 360°$, the angles are coterminal.

31. Since $733° - 2 \cdot 360° = 13°$, the angles $733°$ and $13°$ are coterminal.

33. Since $2223° - 6 \cdot 360° = 63°$, the angles $2223°$ and $63°$ are coterminal.

35. Since $-800° + 3 \cdot 360° = 280°$, the angles $-800°$ and $280°$ are coterminal.

37. Since $\frac{12\pi}{5} - 2\pi = \frac{2\pi}{5}$, the angles $\frac{12\pi}{5}$ and $\frac{2\pi}{5}$ are coterminal.

39. Since $87\pi - 43 \cdot 2\pi = \pi$, the angles 87π and π are coterminal.

41. Since $\frac{17\pi}{4} - 2 \cdot 2\pi = \frac{\pi}{4}$, the angles $\frac{17\pi}{4}$ and $\frac{\pi}{4}$ are coterminal.

43. Using the formula $s = \theta r$, the length of the arc is $s = \left(220 \cdot \frac{\pi}{180}\right) \cdot 5 = \frac{55\pi}{9} \approx 19.2$.

45. Solving for r we have $r = \dfrac{s}{\theta}$, so the radius of the circle is $r = \frac{8}{2} = 4$.

47. Using the formula $s = \theta r$, the length of the arc is $s = 2 \cdot 2 = 4$ mi.

49. Solving for θ we have $\theta = \dfrac{s}{r}$, so the measure of the central angle is $\theta = \frac{100}{50} = 2$ rad. Converting to degrees we have $\theta = 2 \cdot \frac{180°}{\pi} \approx 114.6°$