

Answer Key: Chapter 5 - Conversion of Degrees into Radians

Objective: Solutions are checked for mathematical accuracy. Equivalent exact forms are acceptable where appropriate.

1. Answer: 0 radians <i>Work:</i> $0^\circ \cdot \frac{\pi}{180^\circ} = 0$.	2. Answer: $\frac{\pi}{12}$ radians <i>Work:</i> $15^\circ \cdot \frac{\pi}{180^\circ} = \frac{\pi}{12}$.
3. Answer: $\frac{\pi}{10}$ radians <i>Work:</i> $18^\circ \cdot \frac{\pi}{180^\circ} = \frac{\pi}{10}$.	4. Answer: $\frac{\pi}{9}$ radians <i>Work:</i> $20^\circ \cdot \frac{\pi}{180^\circ} = \frac{\pi}{9}$.
5. Answer: $\frac{\pi}{8}$ radians <i>Work:</i> $\frac{45^\circ}{2} \cdot \frac{\pi}{180^\circ} = \frac{\pi}{8}$.	6. Answer: $\frac{2\pi}{15}$ radians <i>Work:</i> $24^\circ \cdot \frac{\pi}{180^\circ} = \frac{2\pi}{15}$.
7. Answer: $\frac{\pi}{6}$ radians <i>Work:</i> $30^\circ \cdot \frac{\pi}{180^\circ} = \frac{\pi}{6}$.	8. Answer: $\frac{\pi}{5}$ radians <i>Work:</i> $36^\circ \cdot \frac{\pi}{180^\circ} = \frac{\pi}{5}$.
9. Answer: $\frac{2\pi}{9}$ radians <i>Work:</i> $40^\circ \cdot \frac{\pi}{180^\circ} = \frac{2\pi}{9}$.	10. Answer: $\frac{\pi}{4}$ radians <i>Work:</i> $45^\circ \cdot \frac{\pi}{180^\circ} = \frac{\pi}{4}$.

Answer Key: Chapter 5 - Conversion of Degrees into Radians

Objective: Solutions are checked for mathematical accuracy. Equivalent exact forms are acceptable where appropriate.

11. Answer: $\frac{3\pi}{10}$ radians <i>Work:</i> $54^\circ \cdot \frac{\pi}{180^\circ} = \frac{3\pi}{10}$.	12. Answer: $\frac{\pi}{3}$ radians <i>Work:</i> $60^\circ \cdot \frac{\pi}{180^\circ} = \frac{\pi}{3}$.
13. Answer: $\frac{2\pi}{5}$ radians <i>Work:</i> $72^\circ \cdot \frac{\pi}{180^\circ} = \frac{2\pi}{5}$.	14. Answer: $\frac{5\pi}{12}$ radians <i>Work:</i> $75^\circ \cdot \frac{\pi}{180^\circ} = \frac{5\pi}{12}$.
15. Answer: $\frac{\pi}{2}$ radians <i>Work:</i> $90^\circ \cdot \frac{\pi}{180^\circ} = \frac{\pi}{2}$.	16. Answer: $\frac{7\pi}{12}$ radians <i>Work:</i> $105^\circ \cdot \frac{\pi}{180^\circ} = \frac{7\pi}{12}$.
17. Answer: $\frac{5\pi}{8}$ radians <i>Work:</i> $\frac{225^\circ}{2} \cdot \frac{\pi}{180^\circ} = \frac{5\pi}{8}$.	18. Answer: $\frac{2\pi}{3}$ radians <i>Work:</i> $120^\circ \cdot \frac{\pi}{180^\circ} = \frac{2\pi}{3}$.
19. Answer: $\frac{3\pi}{4}$ radians <i>Work:</i> $135^\circ \cdot \frac{\pi}{180^\circ} = \frac{3\pi}{4}$.	20. Answer: $\frac{5\pi}{6}$ radians <i>Work:</i> $150^\circ \cdot \frac{\pi}{180^\circ} = \frac{5\pi}{6}$.

Answer Key: Chapter 5 - Conversion of Degrees into Radians

Objective: Solutions are checked for mathematical accuracy. Equivalent exact forms are acceptable where appropriate.

21. Answer: $\frac{11\pi}{12}$ radians <i>Work:</i> $165^\circ \cdot \frac{\pi}{180^\circ} = \frac{11\pi}{12}$.	22. Answer: π radians <i>Work:</i> $180^\circ \cdot \frac{\pi}{180^\circ} = \pi$.
23. Answer: $\frac{7\pi}{6}$ radians <i>Work:</i> $210^\circ \cdot \frac{\pi}{180^\circ} = \frac{7\pi}{6}$.	24. Answer: $\frac{5\pi}{4}$ radians <i>Work:</i> $225^\circ \cdot \frac{\pi}{180^\circ} = \frac{5\pi}{4}$.
25. Answer: $\frac{4\pi}{3}$ radians <i>Work:</i> $240^\circ \cdot \frac{\pi}{180^\circ} = \frac{4\pi}{3}$.	26. Answer: $\frac{3\pi}{2}$ radians <i>Work:</i> $270^\circ \cdot \frac{\pi}{180^\circ} = \frac{3\pi}{2}$.
27. Answer: $\frac{5\pi}{3}$ radians <i>Work:</i> $300^\circ \cdot \frac{\pi}{180^\circ} = \frac{5\pi}{3}$.	28. Answer: $\frac{7\pi}{4}$ radians <i>Work:</i> $315^\circ \cdot \frac{\pi}{180^\circ} = \frac{7\pi}{4}$.
29. Answer: $\frac{11\pi}{6}$ radians <i>Work:</i> $330^\circ \cdot \frac{\pi}{180^\circ} = \frac{11\pi}{6}$.	30. Answer: 2π radians <i>Work:</i> $360^\circ \cdot \frac{\pi}{180^\circ} = 2\pi$.

Answer Key: Chapter 5 - Conversion of Degrees into Radians

Objective: Solutions are checked for mathematical accuracy. Equivalent exact forms are acceptable where appropriate.

31. Answer: $\frac{7\pi}{3}$ radians <i>Work:</i> $420^\circ \cdot \frac{\pi}{180^\circ} = \frac{7\pi}{3}$.	32. Answer: $\frac{5\pi}{2}$ radians <i>Work:</i> $450^\circ \cdot \frac{\pi}{180^\circ} = \frac{5\pi}{2}$.
33. Answer: 3π radians <i>Work:</i> $540^\circ \cdot \frac{\pi}{180^\circ} = 3\pi$.	34. Answer: 4π radians <i>Work:</i> $720^\circ \cdot \frac{\pi}{180^\circ} = 4\pi$.
35. Answer: $-\frac{\pi}{6}$ radians <i>Work:</i> $-30^\circ \cdot \frac{\pi}{180^\circ} = -\frac{\pi}{6}$.	36. Answer: $-\frac{\pi}{4}$ radians <i>Work:</i> $-45^\circ \cdot \frac{\pi}{180^\circ} = -\frac{\pi}{4}$.
37. Answer: $-\frac{\pi}{3}$ radians <i>Work:</i> $-60^\circ \cdot \frac{\pi}{180^\circ} = -\frac{\pi}{3}$.	38. Answer: $-\frac{\pi}{2}$ radians <i>Work:</i> $-90^\circ \cdot \frac{\pi}{180^\circ} = -\frac{\pi}{2}$.
39. Answer: $-\frac{2\pi}{3}$ radians <i>Work:</i> $-120^\circ \cdot \frac{\pi}{180^\circ} = -\frac{2\pi}{3}$.	40. Answer: $-\frac{3\pi}{4}$ radians <i>Work:</i> $-135^\circ \cdot \frac{\pi}{180^\circ} = -\frac{3\pi}{4}$.

Answer Key: Chapter 5 - Conversion of Degrees into Radians

Objective: Solutions are checked for mathematical accuracy. Equivalent exact forms are acceptable where appropriate.

41. Answer: $-\frac{5\pi}{6}$ radians <i>Work:</i> $-150^\circ \cdot \frac{\pi}{180^\circ} = -\frac{5\pi}{6}$.	42. Answer: $-\frac{5\pi}{4}$ radians <i>Work:</i> $-225^\circ \cdot \frac{\pi}{180^\circ} = -\frac{5\pi}{4}$.
43. Answer: $-\frac{3\pi}{2}$ radians <i>Work:</i> $-270^\circ \cdot \frac{\pi}{180^\circ} = -\frac{3\pi}{2}$.	44. Answer: $\frac{13\pi}{6}$ radians <i>Work:</i> $390^\circ \cdot \frac{\pi}{180^\circ} = \frac{13\pi}{6}$.
45. Answer: $\frac{9\pi}{4}$ radians <i>Work:</i> $405^\circ \cdot \frac{\pi}{180^\circ} = \frac{9\pi}{4}$.	46. Answer: $\frac{8\pi}{3}$ radians <i>Work:</i> $480^\circ \cdot \frac{\pi}{180^\circ} = \frac{8\pi}{3}$.
47. Answer: $\frac{17\pi}{4}$ radians <i>Work:</i> $765^\circ \cdot \frac{\pi}{180^\circ} = \frac{17\pi}{4}$.	48. Answer: $\frac{9\pi}{2}$ radians <i>Work:</i> $810^\circ \cdot \frac{\pi}{180^\circ} = \frac{9\pi}{2}$.
49. Answer: 6π radians <i>Work:</i> $1080^\circ \cdot \frac{\pi}{180^\circ} = 6\pi$.	50. Answer: 8π radians <i>Work:</i> $1440^\circ \cdot \frac{\pi}{180^\circ} = 8\pi$.