

TRIGONOMETRIC FUNCTIONS

1. Range of the sine function is _____ ?

- a) $\{x \mid -1 < x > 1\}$
- b) $\{x \mid -1 < x < 1\}$
- c) $\{x \mid 0 < x > 1\}$
- d) $\{x < 1\}$
- e) None of these

Answer: b

2. The domain of $\sin x$ is

- a) $[-1, 1]$
- b) \mathbb{R}
- c) $\mathbb{R} - \left\{x \mid x = (2n+1)\frac{\pi}{2}, n \in \mathbb{Z}\right\}$
- d) $\mathbb{R} - \{x \mid x = n\pi, n \in \mathbb{Z}\}$
- e) $\mathbb{R} - \{x \mid -1 < x < 1\}$

Answer: b

3. Range of the cosine function is = _____ ?

- a) $\{x \mid -1 < x > 1\}$
- b) $\{x \mid -1 < x < 1\}$
- c) $\{x \mid 0 < x > 1\}$
- d) $\{x > 1\}$
- e) None of these

Answer: b

4. The domain of the $\cos x$ is

- a) $[-1, 1]$
- b) \mathbb{R}
- c) $\mathbb{R} - \left\{x \mid x = (2n+1)\frac{\pi}{2}, n \in \mathbb{Z}\right\}$
- d) $\mathbb{R} - \{x \mid x = n\pi, n \in \mathbb{Z}\}$
- e) $\mathbb{R} - \{x \mid -1 < x < 1\}$

Answer: b

5. The domain of $\tan x$ is

- a) $[-1, 1]$
- b) \mathbb{R}
- c) $\mathbb{R} - \left\{x \mid x = (2n+1)\frac{\pi}{2}, n \in \mathbb{Z}\right\}$

d) $\mathbb{R} - \{x \mid x = n\pi, n \in \mathbb{Z}\}$

e) $\mathbb{R} - \{x \mid -1 < x < 1\}$

Answer: c

6. The domain of $\cot x$ is

a) $[-1, 1]$

\mathbb{R}

$\mathbb{R} - \left\{x \mid x = (2n+1)\frac{\pi}{2}, n \in \mathbb{Z}\right\}$

$\mathbb{R} - \{x \mid x = n\pi, n \in \mathbb{Z}\}$

$\mathbb{R} - \{x \mid -1 < x < 1\}$

Answer: d

7. The domain of $\sec x$ is

a) $[-1, 1]$

b) \mathbb{R}

c) $\mathbb{R} - \left\{x \mid x = (2n+1)\frac{\pi}{2}, n \in \mathbb{Z}\right\}$

d) $\mathbb{R} - \{x \mid x = n\pi, n \in \mathbb{Z}\}$

e) $\mathbb{R} - \{x \mid -1 < x < 1\}$

Answer: c

8. The domain of $\csc x$ is

a) $[-1, 1]$

b) \mathbb{R}

c) $\mathbb{R} - \left\{x \mid x = (2n+1)\frac{\pi}{2}, n \in \mathbb{Z}\right\}$

d) $\mathbb{R} - \{x \mid x = n\pi, n \in \mathbb{Z}\}$

e) $\mathbb{R} - \{x \mid -1 < x < 1\}$

Answer: d

9. The range of $\sin x$ is

a) $[-1, 1]$

b) \mathbb{R}

c) $\mathbb{R} - \left\{x \mid x = (2n+1)\frac{\pi}{2}, n \in \mathbb{Z}\right\}$

d) $\mathbb{R} - \{x \mid x = n\pi, n \in \mathbb{Z}\}$

e) $\mathbb{R} - \{x \mid -1 < x < 1\}$

Answer: a

10. The range of $\cos x$ is

a) $[-1, 1]$

b) \mathbb{R}

c) $\mathbb{R} - \left\{ x \mid x = (2n+1)\frac{\pi}{2}, n \in \mathbb{Z} \right\}$

d) $\mathbb{R} - \{x \mid x = n\pi, n \in \mathbb{Z}\}$

e) $\mathbb{R} - \{x \mid -1 < x < 1\}$

Answer: a

11. The range of $\tan x$ is

a) $[-1, 1]$

b) \mathbb{R}

c) $\mathbb{R} - \left\{ x \mid x = (2n+1)\frac{\pi}{2}, n \in \mathbb{Z} \right\}$

d) $\mathbb{R} - \{x \mid x = n\pi, n \in \mathbb{Z}\}$

e) $\mathbb{R} - \{x \mid -1 < x < 1\}$

Answer: b

12. The range of $\cot x$ is

a) $[-1, 1]$

b) \mathbb{R}

c) $\mathbb{R} - \left\{ x \mid x = (2n+1)\frac{\pi}{2}, n \in \mathbb{Z} \right\}$

d) $\mathbb{R} - \{x \mid x = n\pi, n \in \mathbb{Z}\}$

e) $\mathbb{R} - \{x \mid -1 < x < 1\}$

Answer: b

13. The range of $\sec x$ is

a) $[-1, 1]$

b) \mathbb{R}

c) $\mathbb{R} - \left\{ x \mid x = (2n+1)\frac{\pi}{2}, n \in \mathbb{Z} \right\}$

d) $\mathbb{R} - \{x \mid x = n\pi, n \in \mathbb{Z}\}$

e) $\mathbb{R} - \{x \mid -1 < x < 1\}$

Answer: e

14. The range of $\csc x$ is

a) $[-1, 1]$

b) \mathbb{R}

c) $\mathbb{R} - \left\{ x \mid x = (2n+1)\frac{\pi}{2}, n \in \mathbb{Z} \right\}$

d) $\mathbb{R} - \{x \mid x = n\pi, n \in \mathbb{Z}\}$

e) $\mathbb{R} - \{x \mid -1 < x < 1\}$

Answer: e

15. A function $f(x)$ is said to be the periodic function if, for all x in the domain of f , there exists a smallest positive number p such that $f(x+p) =$

a) $f(p)$

b) $f(x)$

c) 0

d) P

e) $x+p$

Answer: b

16. If, for all x in the domain of f , there exists a smallest positive number p such that $f(x+p) = f(x)$, then p is the

a) period of f

b) period of $2f$

c) period of $3f$

d) period of $4f$

e) none of these

Answer: a

17. The period of $\sin x$ is

a) $\frac{\pi}{3}$

b) $\frac{\pi}{2}$

c) $\frac{2\pi}{3}$

d) π

e) 2π

Answer: e

18. The period of $\cos x$ is

a) $\frac{\pi}{3}$

b) $\frac{\pi}{2}$

c) $\frac{2\pi}{3}$

- d) π
- e) 2π

Answer: e

19. The period of $\tan x$ is

- a) $\frac{\pi}{3}$
- b) $\frac{\pi}{2}$
- c) $\frac{2\pi}{3}$
- d) π
- e) 2π

Answer: d

20. The period of $\cot x$ is

- a) $\frac{\pi}{3}$
- b) $\frac{\pi}{2}$
- c) $\frac{2\pi}{3}$
- d) π
- e) 2π

Answer: d

21. The period of $\sec x$ is

- a) $\frac{\pi}{3}$
- b) $\frac{\pi}{2}$
- c) $\frac{2\pi}{3}$
- d) π
- e) 2π

Answer: e

22. The period of $\operatorname{cosec} x$ is

- a) $\frac{\pi}{3}$
- b) $\frac{\pi}{2}$
- c) $\frac{2\pi}{3}$

- d) π
- e) 2π

Answer: e

23. The period of $\sin 2x$ is

- a) $\frac{\pi}{3}$
- b) $\frac{\pi}{2}$
- c) $\frac{2\pi}{3}$
- d) π
- e) 2π

Answer: d

24. The period of $\cos 2x$ is

- a) $\frac{\pi}{3}$
- b) $\frac{\pi}{2}$
- c) $\frac{2\pi}{3}$
- d) π
- e) 2π

Answer: d

25. The period of $\tan 2x$ is

- a) $\frac{\pi}{3}$
- b) $\frac{\pi}{2}$
- c) $\frac{2\pi}{3}$
- d) π
- e) 2π

Answer: b

26. The period of $\cot 2x$ is

- a) $\frac{\pi}{3}$

b) $\frac{\pi}{2}$

c) $\frac{2\pi}{3}$

d) π

e) 2π

Answer: b

27. The period of $\sec 2x$ is

a) $\frac{\pi}{3}$

b) $\frac{\pi}{2}$

c) $\frac{2\pi}{3}$

d) π

e) 2π

Answer: d

28. The period of $\operatorname{cosec} 2x$ is

a) $\frac{\pi}{3}$

b) $\frac{\pi}{2}$

c) $\frac{2\pi}{3}$

d) π

e) 2π

Answer: d

29. The period of $\sin 3x$ is

a) $\frac{\pi}{3}$

b) $\frac{\pi}{2}$

c) $\frac{2\pi}{3}$

d) π

e) 2π

Answer: c

30. The period of $\cos 7x$ is

a) $\frac{\pi}{3}$

b) $\frac{\pi}{2}$

c) $\frac{2\pi}{7}$

d) π

e) 2π

Answer: c

31. The period of $\cos \frac{x}{3}$ is

a) π

b) 2π

c) 3π

d) 4π

e) 6π

Answer: e

32. The period of $\tan \frac{x}{3}$ is

a) π

b) 2π

c) 3π

d) 4π

e) 6π

Answer: c

33. The period of $\cot \frac{x}{3}$ is

a) π

b) 2π

c) 3π

d) 4π

e) 6π

Answer: c

34. The period of $\sec \frac{x}{3}$ is

a) π

b) 2π

c) 3π

d) 4π

e) 6π
Answer: e

35. The period of $\cot 3x$ is

a) $\frac{\pi}{3}$

b) $\frac{\pi}{2}$

c) $\frac{2\pi}{3}$

d) π

e) 2π

Answer: a

36. The period of $\tan 3x$ is

a) $\frac{\pi}{3}$

b) $\frac{\pi}{2}$

c) $\frac{2\pi}{3}$

d) π

e) 2π

Answer: a

37. The period of $3\tan \frac{x}{3}$ is

a) π

b) 2π

c) 3π

d) 4π

e) 6π

Answer: c

38. The period of $3\sec \frac{x}{3}$ is

a) π

b) 2π

c) 3π

d) 4π

e) 6π

Answer: e

39. The period of $15\csc \frac{x}{3}$ is

a) π

b) 2π

c) 3π

d) 4π

e) 6π

Answer: e

40. the period of $15\csc \frac{x}{5}$ is

a) 15π

b) 10π

c) 5π

d) 2π

e) π

Answer: b