

ECAT Pre General Science Mathematics Chapter 15 Inverse Trigonometric Functions Online Test

Sr	Questions	Answers Choice
1	The domain of the principle sine function is	
2	The range of the principal sine function is	
3	The domain of the principle cos function is	
4	The domain of the principal tan function is	
5	The range of the principle cos function is	
6	The range of the principle cot function is	
7	Question Image	
8	Question Image	
9	Question Image	
10	Question Image	
11	Question Image	
12	Question Image	
13	Question Image	
14	Question Image	A. 0 B. -1 C. 1/2 D. 1
15	Question Image	
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36	<input type="text" value="Question Image"/>	
37	$\tan^{-1}(1/4) + \tan^{-1}(2/9)$ is equal to	<p>A. $\frac{1}{2} \cos^{-1}(3/5)$ B. $\frac{1}{2} \sin^{-1}(3/5)$ C. $\frac{1}{2} \tan^{-1}(3/5)$ D. $\tan^{-1} 1/2$</p>
38	The value of $\sin [\arccos(-1/2)]$ is	
39	<input type="text" value="Question Image"/>	<p>A. 1 B. -1 C. 0 D. None of these</p>
40	If $2 \tan^{-1}(\cos x) = \tan^{-1}(\operatorname{cosec}^2 x)$, then x is equal to	<p>A. $\frac{\pi}{3}$ B. $\frac{\pi}{2}$ C. $\frac{\pi}{6}$ D. $\frac{\pi}{4}$</p>
41	<input type="text" value="Question Image"/>	
42	<input type="text" value="Question Image"/>	<p>A. $\frac{\pi}{2}$ B. $\frac{\pi}{3}$ C. $\frac{\pi}{4}$ D. $\frac{\pi}{6}$</p>
43	<input type="text" value="Question Image"/>	<p>A. $\frac{\pi}{4}$ B. $\frac{\pi}{6}$ C. $\frac{\pi}{3}$ D. 2π</p>
44	<input type="text" value="Question Image"/>	<p>A. 1 B. 7 C. 4 D. None of these</p>
45	If $\cos^{-1} p + \cos^{-1} q + \cos^{-1} r = \pi$ then $p^2 + q^2 + r^2 + 2pqr$ is equal to	<p>A. 3 B. 1 C. 2 D. -1</p>
46	<input type="text" value="Question Image"/>	
47	<input type="text" value="Question Image"/>	<p>A. $x = 3$ B. $x = 1/5$ C. $x = 0$ D. None of these</p>
48	<input type="text" value="Question Image"/>	<p>A. 1 B. -1 C. 0 D. None of these</p>
49	<input type="text" value="Question Image"/>	<p>A. 0 B. 1 C. -1 D. None of these</p>

50	Question Image	
51	Question Image	<p>A. $\cos 2x = \sin 4y$ B. $\cos 4y = \cos 2x$ C. $\cos 3y = \sin 4x$ D. None of these</p>
52	Question Image	<p>A. $1/3$ B. 1 C. 3 D. None of these</p>
53	$\tan^{-1}x > \cot^{-1}x$ holds for	<p>A. $x > 1$ B. $x < 1$ C. $x = 1$ D. All values of x</p>
54	Question Image	
55	Question Image	<p>A. 1 B. 0 C. 3 D. -3</p>
56	Question Image	<p>A. 20 B. 10 C. 0 D. None of these</p>
57	Question Image	<p>A. 2 B. 5 C. 7 D. None of these</p>
58	The solution set of the equation $\tan^{-1}x - \cot^{-1}x = \cos^{-1}(2 - x)$ is	<p>A. $[0, 1]$ B. $[-1, 1]$ C. $[1, 3]$ D. None of these</p>
59	Question Image	<p>A. $16 / 7$ B. $6 / 17$ C. $7 / 16$ D. None of these</p>
60	Question Image	<p>A. $\frac{\pi}{3}$ B. $\frac{\pi}{4}$ C. $\frac{\pi}{2}$ D. π</p>
61	Question Image	<p>A. $\frac{\pi}{4}$ B. $\frac{\pi}{6}$ C. $\frac{\pi}{3}$ D. 0</p>
62	$\tan(\cot^{-1}x)$ is equal to	<p>A. $\cot(\tan^{-1}x)$ B. $\tan x$ C. $\sec x$ D. None of these</p>
63	$\sin[\cot^{-1}\{\cos(\tan^{-1}x)\}] =$	
64	Question Image	<p>A. $\frac{\pi}{2}$ B. $\frac{\pi}{3}$ C. $\frac{\pi}{4}$ D. $\frac{\pi}{6}$</p>
65	Question Image	<p>A. $\frac{\pi}{3}$ B. $\frac{\pi}{4}$ C. $\frac{\pi}{6}$ D. 0</p>
66	Question Image	
67	Question Image	
68	If $\tan^{-1}3 + \tan^{-1}x = \tan^{-1}8$, then $x =$	<p>A. 5 B. $1/5$ C. $5/14$ D. $14/5$</p>
69	The number of triplets (x, y, z) satisfying $\sin^{-1}x + \cos^{-1}y + \sin^{-1}z = 2\pi$ is	<p>A. 0 B. 2 C. 1 D. Infinite</p>

70	$\sin^{-1}[-1/2] = \underline{\hspace{2cm}}$	
71	$\tan^{-1}1/x = \underline{\hspace{2cm}}$	A. $\sin x$ B. $\sec^{-1}x$ C. $\cot^{-1}x$ D. None of these
72	$\sin^{-1}(-x) =$	A. $\cos^{-1}x$ B. $-\sin^{-1}x$ C. $\cot^{-1}x$ D. None of these
73	$\sec^{-1}x =$	A. $\cos^{-1}1/x$ B. $\operatorname{cosec}^{-1}1/x$ C. $\cos^{-1}(-x)$ D. $\tan^{-1}x$
74	The principal value of $\sin^{-1}\sqrt{3/2}$ is	A. $-\pi/3$ B. $\pi/3$ C. $2\pi/3$ D. $\pi/2$
75	The principal value of $\sin^{-1}(-1/2)$	A. $\pi/3$ B. $\pi/4$ C. $\pi/6$ D. $-\pi/6$
76	The domain of the function $y = \sin x$, is	A. $-\pi/2 \leq x \leq \pi/2$ B. $\pi \leq x \leq \pi$ C. $-2\pi \leq x \leq 2\pi$ D. $-1 \leq x \leq 1$
77	$x = \sin^{-1}3$, then the value of $\sin x$ is	A. $\sqrt{3/2}$ B. 3 C. Not possible D. -1
78	In the interval $0 \leq x \leq \pi$, the sine is	A. Not a function B. Not defined C. Infinity D. Not one-to-one function
79	The Principal value of $\sin^{-1}(-1/2)$	A. $\pi/2$ B. $-\pi/2$ C. π D. $-\pi$
80	The value of $\sin^{-1}5/13$ is equal to	A. $\cos 5/13$ B. $\tan^{-1}5/12$ C. $\cos^{-1}5/12$ D. $2 \cos^{-1}4/5$
81	The value of $\sin^{-1}24/25$ is equal to	A. $\csc^{-1}25/24$ B. $\sec^{-1}24/25$ C. $2 \tan^{-1}4/5$ D. $2 \cos^{-1}24/25$
82	The principal value of $\sin^{-1}[-\sqrt{3}/2]$ is	A. $5\pi/3$ B. $-2\pi/3$ C.  $\pi/3$ D. $\pi/3$
83	$\sin(\sin^{-1}(1/2)) =$	A. 0 B. 2 C. ∞ D. $1/2$
84	$\sin^{-1}x =$	A. $\sin(\pi/2 - x)$ B. $\sin^{-1}(\pi/2 - x)$ C. $\pi/2 - \cos^{-1}x$ D. $\pi/2 + \cos^{-1}x$
85	$\sin(2\sin^{-1}0.8)$	A. 0.56 B. 0.69 C. -0.16 D. 0.96
86	$\sin^{-1}(\sin 2\pi/3) =$	A. $\pi/2$ B. $2\pi/3$ C. $-3\pi/2$ D. $\pi/3$
87	$\sin^{-1}(-x) =$	A. x B. $-x$ C. $-\sin^{-1}x$ D. $\cos^{-1}x$

88	$\sin^{-1} x =$	<p>A. $\tan^{-1} x$</p> <p>B. $\operatorname{Cosec}^{-1} x$</p> <p>C. $\operatorname{Cosec} x$</p> <p>D. $\operatorname{cosec}^{-1}(1/x)$</p>
89	What is the value of $\cos^{-1}(1/2)$?	<p>A. $\pi/3$</p> <p>B. $\pi/4$</p> <p>C. $3\pi/2$</p> <p>D. $\pi/6$</p>
90	The value of $\cos(\cos^{-1} 1/2)$ is	<p>A. $1/2$</p> <p>B. $\sqrt{3}/2$</p> <p>C. $-1/2$</p> <p>D. $1/\sqrt{2}$</p>
91	What is the value of $\cos(\cos^{-1} 2)$?	<p>A. $\sqrt{2}$</p> <p>B. $1/2$</p> <p>C. <i>undefine</i></p> <p>D. 0</p>
92	The exact degree value of the function $\sin^{-1}(-\sqrt{3}/2)$ is	<p>A. 70°</p> <p>B. 50°</p> <p>C. 90°</p> <p>D. 60°</p>
93	$\cos(\cos 4\pi/3) =$	<p>A. $\pi/2$</p> <p>B. $\pi/3$</p> <p>C. $2\pi/3$</p> <p>D. $-\pi/3$</p>
94	If $\cos(2 \sin^{-1} x) = 1/9$, then what is the value of x ?	<p>A. $1/3$</p> <p>B. $-2/3$</p> <p>C. $2/3$</p> <p>D. $2/3, -2/3$</p>
95	If $\pi \leq x \leq 2\pi$, then $\cos^{-1}(\cos x) =$	<p>A. $\cos x$</p> <p>B. $-x$</p> <p>C. $1/x$</p> <p>D. $-x$</p>
96	$\cos^{-1}(-x) =$	<p>A. $-x$</p> <p>B. $1/x$</p> <p>C. $\tan^{-1} x$</p> <p>D. $\pi - \cos^{-1} x$</p>
97	$\cos^{-1}(x) =$	<p>A. $\cos x$</p> <p>B. x</p> <p>C. $\tan^{-1}(-x)$</p> <p>D. $\operatorname{Sec}^{-1}(1/x)$</p>
98	$\cos^{-1}(\cos x) =$	<p>A. x</p> <p>B. $\cos x$</p> <p>C. $x = 1/x$</p> <p>D. $\cos^{-2} x$</p>
99	$\cos^{-1} 12/13 =$	<p>A. $\tan^{-1} 3/5$</p> <p>B. $\cot^{-1} 13/12$</p> <p>C. $\operatorname{Sec}^{-1} 13/12$</p> <p>D. $\sin^{-1} 5/13$</p>
100	The exact value of $\cos^{-1}(0)$ is	<p>A. $\pi/2$</p> <p>B. $-\pi/2$</p> <p>C. 3π</p> <p>D. $\pi - \pi/6$</p>
101	The exact value of $\cos^{-1}(-1) + \cos^{-1}(1) =$	<p>A. π</p> <p>B. $-\pi$</p> <p>C. $\pi/2$</p> <p>D. $\pi/3$</p>
102	The domain of the principle sine function is	
103	The range of the principal sine function is	
104	The domain of the principle cos function is	
105	The domain of the principal tan function is	
106	The range of the principle cos function is	
107	The range of the principle cot function is	
108	Question Image	
109	Question Image	
110	Question Image	

110 Question Image

111 Question Image

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114 Question Image

115 Question Image

- A. 0
- B. -1
- C. $\frac{1}{2}$
- D. 1

116 Question Image

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138 $\tan^{-1}(1/4) + \tan^{-1}(2/9)$ is equal to

- A. $\frac{1}{2} \cos^{-1}(3/5)$
- B. $\frac{1}{2} \sin^{-1}(3/5)$
- C. $\frac{1}{2} \tan^{-1}(3/5)$
- D. $\tan^{-1}(1/2)$

139 The value of $\sin [\arccos(-1/2)]$ is

140 Question Image

- A. 1
- B. -1
- C. 0
- D. None of these

141 If $2 \tan^{-1}(\cos x) = \tan^{-1}(\operatorname{cosec}^2 x)$, then x is equal to

- A. $\frac{\pi}{3}$
- B. $\frac{\pi}{2}$
- C. $\frac{\pi}{6}$
- D. π

142	Question Image	
143	Question Image	<p>A. ><i>π</i> ><i>π</i> ><i>π</i> ><i>π</i></p>
144	Question Image	<p>A. ><i>π</i> ><i>π</i> ><i>π</i> ><i>2π</i></p>
145	Question Image	<p>A. 1 B. 7 C. 4 D. None of these</p>
146	If $\cos^{-1}p + \cos^{-1}q + \cos^{-1}r = \pi$ then $p^2 + q^2 + r^2 + 2pqr$ is equal to	<p>A. 3 B. 1 C. 2 D. -1</p>
147	Question Image	
148	Question Image	<p>A. $x = 3$ B. $x = 1/5$ C. $x = 0$ D. None of these</p>
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154	$\tan^{-1}x > \cot^{-1}x$ holds for	<p>A. $x > 1$ B. $x < 1$ C. $x = 1$ D. All values of x</p>
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158	Question Image	<p>A. 2 B. 5 C. 7 D. None of these</p>

159	The solution set of the equation $\tan^{-1}x - \cot^{-1}x = \cos^{-1}(2 - x)$ is	A. [0, 1] B. [-1, 1] C. [1, 3] D. None of these
160	Question Image	A. 16 / 7 B. 6 / 17 C. 7 / 16 D. None of these
161	Question Image	A. $\pi / 3$ B. $\pi / 4$ C. $\pi / 2$ D. π
162	Question Image	A. $\pi / 4$ B. $\pi / 6$ C. $\pi / 3$ D. 0
163	$\tan(\cot^{-1}x)$ is equal to	A. $\cot(\tan^{-1}x)$ B. $\tan x$ C. $\sec x$ D. None of these
164	$\sin[\cot^{-1}\{\cos(\tan^{-1}x)\}] =$	
165	Question Image	A. π B. $\pi / 2$ C. $\pi / 3$ D. $\pi / 4$
166	Question Image	A. $\pi / 3$ B. $\pi / 4$ C. $\pi / 6$ D. 0
167	Question Image	
168	Question Image	
169	If $\tan^{-1}3 + \tan^{-1}x = \tan^{-1}8$, then $x =$	A. 5 B. 1/5 C. 5/14 D. 14/5
170	The number of triplets (x, y, z) satisfying $\sin^{-1}x + \cos^{-1}y + \sin^{-1}z = 2\pi$ is	A. 0 B. 2 C. 1 D. Infinite
171	$\sin^{-1}[-1/2] =$ _____	
172	$\tan^{-1}1/x =$ _____	A. $\sin x$ B. $\sec^{-1}x$ C. $\cot^{-1}x$ D. None of these
173	$\sin^{-1}(-x) =$	A. $\cos^{-1}x$ B. $-\sin^{-1}x$ C. $\cot^{-1}x$ D. None of these
174	$\sec^{-1}x =$	A. $\cos^{-1}1/x$ B. $\operatorname{cosec}^{-1}1/x$ C. $\cos^{-1}(-x)$ D. $\tan^{-1}x$
175	The principal value of $\sin^{-1}\sqrt{3/2}$ is	A. $-\pi/3$ B. $\pi/3$ C. $2\pi/3$ D. $\pi/2$
176	The principal value of $\sin^{-1}(-1/2)$	A. $\pi/3$ B. $\pi/4$ C. $\pi/6$ D. $-\pi/6$
177	The domain of the function $y = \sin x$, is	A. $-\pi/2 \leq x \leq \pi/2$ B. $\pi/2 \leq x \leq \pi$ C. $-2\pi \leq x \leq 2\pi$ D. $-1 \leq x \leq 1$

A. $\sqrt{3/2}$

178	$x = \sin^{-1} 3$, then the value of $\sin x$ is	B. 3 C. Not possible D. -1
179	In the interval $0 \leq x \leq \pi$, the sine is	A. Not a function B. Not defined C. Infinity D. Not one-to-one function
180	The Principal value of $\sin^{-1}(-1/2)$	A. $\pi/2$ B. $-\pi/2$ C. π D. $-\pi$
181	The value of $\sin^{-1} 5/13$ is equal to	A. $\cos 5/13$ B. $\tan^{-1} 5/12$ C. $\cos^{-1} 5/12$ D. $2 \cos^{-1} 4/5$
182	The value of $\sin^{-1} 24/25$ is equal to	A. $\csc^{-1} 25/24$ B. $\sec^{-1} 24/25$ C. $2 \tan^{-1} 4/5$ D. $2 \cos^{-1} 24/25$
183	The principal value of $\sin^{-1}[-\sqrt{3}/2]$ is	A. $5\pi/3$ B. $-2\pi/3$ C.  D. $\pi/3$
184	$\sin(\sin^{-1}(1/2)) =$	A. 0 B. 2 C. ∞ D. $1/2$
185	$\sin^{-1} x =$	A. $\sin(\pi/2 - x)$ B. $\sin^{-1}(\pi/2 - x)$ C. $\pi/2 - \cos^{-1} x$ D. $\pi/2 + \cos^{-1} x$
186	$\sin(2\sin^{-1} 0.8)$	A. 0.56 B. 0.69 C. -0.16 D. 0.96
187	$\sin^{-1}(\sin 2\pi/3) =$	A. $\pi/2$ B. $2\pi/3$ C. $-3\pi/2$ D. $\pi/3$
188	$\sin^{-1}(-x) =$	A. x B. $-x$ C. $-\sin^{-1} x$ D. $\cos^{-1} x$
189	$\sin^{-1} x =$	A. $\tan^{-1} x$ B. $\operatorname{cosec}^{-1} x$ C. $\operatorname{cosec} x$ D. $\operatorname{cosec}^{-1}(1/x)$
190	What is the value of $\cos^{-1}(1/2)$?	A. $\pi/3$ B. $\pi/4$ C. $3\pi/2$ D. $\pi/6$
191	The value of $\cos(\cos^{-1} 1/2)$ is	A. $1/2$ B. $\sqrt{3}/2$ C. $-1/2$ D. $1/\sqrt{2}$
192	What is the value of $\cos(\cos^{-1} 2)$?	A. $\sqrt{2}$ B. $1/2$ C. undefined D. 0
193	The exact degree value of the function $\sin^{-1}(-\sqrt{3}/2)$ is	A. 70° B. 50° C. 90° D. 60°
194	$\cos(\cos 4\pi/3) =$	A. $\pi/2$ B. $\pi/3$ C. $2\pi/3$ D. $-\pi/3$
195	If $\cos(2 \sin^{-1} x) = 1/9$, then what is the value of x ?	A. $1/3$ B. $-2/3$ C. $2/3$

01 x7

C. $2/3$
D. $2/3, -2/3$

196 If $\pi \leq x \leq 2\pi$, then $\cos^{-1}(\cos x) =$

A. $\cos x$
B. $-x$
C. $1/x$

D. $-x$

197 $\cos^{-1}(-x) =$

A. $-x$
B. $1/x$
C. $\tan^{-1} x$

D. $\pi - \cos^{-1} x$

198 $\cos^{-1}(x) =$

A. $\cos x$
B. x
C. $\tan^{-1}(-x)$

D. $\sec^{-1}(1/x)$

199 $\cos^{-1}(\cos x) =$

A. x

B. $\cos x$

C. $x = 1/x$

D. $\cos^{-2} x$

200 $\cos^{-1} 12/13 =$

A. $\tan^{-1} 3/5$

B. $\cot^{-1} 13/12$

C. $\sec^{-1} 13/12$

D. $\sin^{-1} 5/13$

201 The exact value of $\cos^{-1}(0)$ is

A. $\pi/2$

B. $-\pi/2$

C. 3π

D. $\pi - \pi/6$

202 The exact value of $\cos^{-1}(-1) + \cos^{-1}(1) =$

A. π

B. $-\pi$

C. $\pi/2$

D. $\pi/3$