

1) The inverse of the function $f = \{(0,3), (-2,1), (3,4), (5,-2), (1,7)\}$ is .

☐ A $f^{-1} = \{(3,0), (1,-2), (4,3), (-2,5), (7,1)\}$

☐ B $f^{-1} = \{(0,3), (1,-2), (4,3), (-2,5), (7,1)\}$

☐ C $f^{-1} = \{(0,3), (-2,1), (4,3), (-2,5), (7,1)\}$

☐ D $f^{-1} = \{(-2,1), (3,4), (5,-2), (1,7), (0,3)\}$

2) Find the inverse of the function $f(x) = 2x + 3$.

☐ A $f^{-1}(x) = \frac{1}{2x+3}$ ☐ B $f^{-1}(x) = \frac{x-3}{2}$

☐ C $f^{-1}(x) = \frac{x+3}{2}$ ☐ D $f^{-1}(x) = \frac{3-x}{2}$

3) Find the inverse of the function $f(x) = 3 - 2x$.

☐ A $f^{-1}(x) = \frac{1}{3-2x}$ ☐ B $f^{-1}(x) = \frac{x-3}{2}$

☐ C $f^{-1}(x) = \frac{x+3}{2}$ ☐ D $f^{-1}(x) = \frac{3-x}{2}$

4) Find the inverse of the function $f(x) = 3 - \frac{x}{2}$.

☐ A $f^{-1}(x) = 6 - 2x$ ☐ B $f^{-1}(x) = 2x - 6$

☐ C $f^{-1}(x) = 3 - 2x$ ☐ D $f^{-1}(x) = \frac{2}{6-x}$

5) Find the inverse of the function $f(x) = \sqrt{2x-3}$.

☐ A $f^{-1}(x) = \frac{x^2-3}{2}$ ☐ B $f^{-1}(x) = \frac{1}{\sqrt{2x-3}}$

☐ C $f^{-1}(x) = \frac{x^2+3}{2}$ ☐ D $f^{-1}(x) = \frac{3-x^2}{2}$

6) Find the inverse of the function $f(x) = \sqrt[3]{3-2x}$.

☐ A $f^{-1}(x) = \frac{x^3+3}{2}$ ☐ B $f^{-1}(x) = \frac{3-x^3}{2}$

☐ C $f^{-1}(x) = \frac{1}{\sqrt[3]{3-2x}}$ ☐ D $f^{-1}(x) = \frac{2-x^3}{3}$

7) Find the inverse of the function $f(x) = (2x + 3)^2, x \in [0, \infty)$.	
☐ A $f^{-1}(x) = \frac{\sqrt{x} - 3}{2}$	☐ B $f^{-1}(x) = (2x + 3)^{-2}$
☐ C $f^{-1}(x) = \frac{\sqrt{x} + 3}{2}$	☐ D $f^{-1}(x) = \frac{x - \sqrt{3}}{2}$
8) Find the inverse of the function $f(x) = -(x - 3)^3$.	
☐ A $f^{-1}(x) = 3 + \sqrt[3]{x}$	☐ B $f^{-1}(x) = \sqrt[3]{x} + 3$
☐ C $f^{-1}(x) = \sqrt[3]{-x} + 3$	☐ D $f^{-1}(x) = (x - 3)^{-3}$
9) Find the inverse of the function $f(x) = \frac{x}{x - 3}$.	
☐ A $f^{-1}(x) = -\frac{3x}{x - 1}$	☐ B $f^{-1}(x) = \frac{3x}{x + 1}$
☐ C $f^{-1}(x) = \frac{3x}{x - 1}$	☐ D $f^{-1}(x) = \frac{x - 3}{x}$
10) Find the inverse of the function $f(x) = \frac{x - 3}{x}$.	
☐ A $f^{-1}(x) = \frac{3}{1 - x}$	☐ B $f^{-1}(x) = \frac{x}{x - 3}$
☐ C $f^{-1}(x) = \frac{3}{1 + x}$	☐ D $f^{-1}(x) = -\frac{3}{1 - x}$
11) Find the inverse of the function $f(x) = \frac{x + 2}{x - 3}$.	
☐ A $f^{-1}(x) = \frac{3x + 2}{x + 1}$	☐ B $f^{-1}(x) = \frac{3x + 2}{x - 1}$
☐ C $f^{-1}(x) = \frac{3x - 2}{x - 1}$	☐ D $f^{-1}(x) = \frac{x - 3}{x + 2}$
12) Find the inverse of the function $f(x) = \sqrt{x} + 5$.	
☐ A $f^{-1}(x) = (x - 5)^{-2}$	☐ B $f^{-1}(x) = \frac{1}{\sqrt{x} + 5}$
☐ C $f^{-1}(x) = (x + 5)^2$	☐ D $f^{-1}(x) = (x - 5)^2$
13) Find the inverse of the function $f(x) = \sqrt[3]{x^5}$.	
☐ A $f^{-1}(x) = \sqrt[5]{x^3}$	☐ B $f^{-1}(x) = \frac{1}{\sqrt[3]{x^5}}$
☐ C $f^{-1}(x) = -\sqrt[3]{x^5}$	☐ D $f^{-1}(x) = \sqrt[15]{x}$

14) Find the inverse of the function $f(x) = 2x^3 - 5$.			
☐ A $f^{-1}(x) = \frac{1}{2x^3 - 5}$	☐ B $f^{-1}(x) = \sqrt[3]{\frac{x+5}{2}}$		
☐ C $f^{-1}(x) = \sqrt[3]{\frac{x+2}{5}}$	☐ D $f^{-1}(x) = \sqrt[3]{\frac{x-5}{2}}$		
15) Find the inverse of the function $f(x) = \sqrt[3]{\frac{x+2}{5}}$.			
☐ A $f(x) = \sqrt[3]{\frac{5}{x+2}}$	☐ B $f^{-1}(x) = 5x^3 + 2$		
☐ C $f^{-1}(x) = 2 - 5x^3$	☐ D $f^{-1}(x) = 5x^3 - 2$		
16) Evaluate $2^{\log_2(5x+3)}$.			
☐ A $5x + 3$	☐ B $\log(5x + 3)$	☐ C $3x + 5$	☐ D $3 - 5x$
17) Evaluate $\log_2 2^{(5x+3)}$.			
☐ A $3 - 5x$	☐ B $2^{(5x+3)}$	☐ C $\log(5x + 3)$	☐ D $5x + 3$
18) $\log_2 64 - \log_2 32 + \log_2 2 =$			
☐ A 1	☐ B 2	☐ C 3	☐ D 0
19) $\log_3 27 - \log_3 81 + 5\log_3 3 =$			
☐ A 4	☐ B 1	☐ C 3	☐ D 0
20) $\log_3 54 - \log_3 2 =$			
☐ A 1	☐ B 2	☐ C 3	☐ D 4
21) If $\log_2(6 + 2x) = 1$, then $x =$			
☐ A 1	☐ B -1	☐ C 2	☐ D -2
22) If $\ln(x + 3) = 5$, then $x =$			
☐ A $e^5 - 3$	☐ B $e^5 + 3$	☐ C e^5	☐ D 5
23) If $\ln(x) = 5$, then $x =$			
☐ A 5	☐ B $e^5 + 5$	☐ C e^5	☐ D $\ln 5$
24) If $e^{(2x-3)} = 5$, then $x =$			
☐ A $\frac{3 + \ln 5}{2}$	☐ B $\frac{\ln 5 - 3}{2}$	☐ C $\ln 5 - 3$	☐ D $\frac{\ln 5}{2} - 3$
25) $\log_3 2 =$			
☐ A $\frac{\ln 2}{\ln 3}$	☐ B $\frac{\ln 3}{\ln 2}$	☐ C $\ln 2 - \ln 3$	☐ D 1
26) $\log 25 + \log 4 =$			
☐ A 1	☐ B 2	☐ C 4	☐ D 0

27)	$\log_3 18 - \log_3 6 =$	☐ A 1	☐ B 2	☐ C 3	☐ D 0
28)	$\log_2 6 - \log_2 15 + \log_2 20 =$	☐ A 1	☐ B 2	☐ C 3	☐ D 0
29)	$e^{3\ln 2} =$	☐ A 8	☐ B 2	☐ C 4	☐ D 9
30)	If $3^{2-x} = 6$, then $x =$	☐ A $-1 + \log_3 2$	☐ B 0	☐ C $1 + \log_3 2$	☐ D $1 - \log_3 2$
31)	Find the inverse of the function $f(x) = 5 + \ln x$.	☐ A e^{x-5}	☐ B e^{x+5}	☐ C $\ln x - 5$	☐ D $\ln x$
32)	Find the domain of the function $f(x) = \sin^{-1}(3x + 5)$.	☐ A $\left(-2, -\frac{4}{3}\right)$	☐ B $\left[-2, -\frac{4}{3}\right]$	☐ C $[-2, 2]$	☐ D $\left[-2, \frac{4}{3}\right]$
33)	Find the domain of the function $f(x) = \cos^{-1}(3x - 5)$.	☐ A $\left(\frac{4}{3}, 2\right)$	☐ B $\left[-\frac{4}{3}, 2\right]$	☐ C $[-2, 2]$	☐ D $\left[\frac{4}{3}, 2\right]$
34)	Find the domain of the function $f(x) = 2\sin^{-1}(x) + 1$.	☐ A $(-1, 1)$	☐ B $[-2, 0]$	☐ C $[-1, 1]$	☐ D $[-2, 2]$
35)	$\sin^{-1}\left(\frac{\sqrt{3}}{2}\right) =$	☐ A $\frac{\pi}{2}$	☐ B $\frac{\pi}{3}$	☐ C $\frac{\pi}{6}$	☐ D $\frac{\pi}{4}$
36)	$\cos^{-1}\left(\frac{\sqrt{3}}{2}\right) =$	☐ A $\frac{\pi}{2}$	☐ B $\frac{\pi}{3}$	☐ C $\frac{\pi}{6}$	☐ D $\frac{\pi}{4}$
37)	$\tan^{-1}\left(\frac{1}{\sqrt{3}}\right) =$	☐ A $\frac{\pi}{2}$	☐ B $\frac{\pi}{3}$	☐ C $\frac{\pi}{6}$	☐ D $\frac{\pi}{4}$
38)	$\sin^{-1}\left(\frac{1}{\sqrt{2}}\right) =$	☐ A $\frac{\pi}{2}$	☐ B $\frac{\pi}{3}$	☐ C $\frac{\pi}{6}$	☐ D $\frac{\pi}{4}$

39)	If $\alpha = \cos^{-1}\left(\frac{3}{\sqrt{13}}\right)$, then $\tan \alpha =$			
☐ A	$\frac{2}{\sqrt{13}}$	☐ B	$\frac{\sqrt{13}}{3}$	☐ C $\frac{2}{3}$
				☐ D $\frac{3}{2}$
40)	If $\alpha = \cos^{-1}\left(\frac{3}{\sqrt{13}}\right)$, then $\csc \alpha =$			
☐ A	$\frac{2}{\sqrt{13}}$	☐ B	$\frac{\sqrt{13}}{2}$	☐ C $\frac{2}{3}$
				☐ D $\frac{3}{2}$
41)	If $\alpha = \cos^{-1}\left(\frac{4}{5}\right)$, then $\csc \alpha =$			
☐ A	$\frac{3}{5}$	☐ B	$\frac{5}{3}$	☐ C $\frac{4}{3}$
				☐ D $\frac{3}{4}$
42)	If $\alpha = \cos^{-1}\left(\frac{4}{5}\right)$, then $\cot \alpha =$			
☐ A	$\frac{3}{5}$	☐ B	$\frac{5}{3}$	☐ C $\frac{4}{3}$
				☐ D $\frac{3}{4}$
43)	If $\alpha = \cos^{-1}\left(\frac{4}{5}\right)$, then $\tan \alpha =$			
☐ A	$\frac{3}{5}$	☐ B	$\frac{5}{3}$	☐ C $\frac{4}{3}$
				☐ D $\frac{3}{4}$
44)	If $\alpha = \cos^{-1}\left(\frac{4}{5}\right)$, then $\sin \alpha =$			
☐ A	$\frac{3}{5}$	☐ B	$\frac{5}{3}$	☐ C $\frac{4}{3}$
				☐ D $\frac{3}{4}$
45)	$\sin\left(\cos^{-1}\left(\frac{4}{5}\right)\right) =$			
☐ A	$\frac{3}{5}$	☐ B	$\frac{5}{3}$	☐ C $\frac{4}{3}$
				☐ D $\frac{3}{4}$
46)	$\tan\left(\cos^{-1}\left(\frac{4}{5}\right)\right) =$			
☐ A	$\frac{3}{5}$	☐ B	$\frac{5}{3}$	
☐ C	$\frac{4}{3}$	☐ D	$\frac{3}{4}$	

47) $\sin\left(2\sin^{-1}\left(\frac{2}{5}\right)\right) =$ (Use the identity $\sin(2x) = 2\sin x \cos x$) ☐ A $\frac{2\sqrt{21}}{25}$ ☐ B $\frac{4\sqrt{21}}{25}$ ☐ C $\frac{4\sqrt{21}}{5}$ ☐ D $\frac{100}{\sqrt{21}}$
48) $\cos(\tan^{-1} x) =$ ☐ A $\frac{1}{\sqrt{x^2+1}}$ ☐ B $\frac{x}{\sqrt{x^2+1}}$ ☐ C $\sqrt{x^2+1}$ ☐ D $\frac{\sqrt{x^2+1}}{x}$
49) $\sin(\tan^{-1} x) =$ ☐ A $\frac{1}{\sqrt{x^2+1}}$ ☐ B $\frac{x}{\sqrt{x^2+1}}$ ☐ C $\sqrt{x^2+1}$ ☐ D $\frac{\sqrt{x^2+1}}{x}$
50) $\csc(\tan^{-1} x) =$ ☐ A $\frac{1}{\sqrt{x^2+1}}$ ☐ B $\frac{x}{\sqrt{x^2+1}}$ ☐ C $\sqrt{x^2+1}$ ☐ D $\frac{\sqrt{x^2+1}}{x}$
51) $\sec(\tan^{-1} x) =$ ☐ A $\frac{1}{\sqrt{x^2+1}}$ ☐ B $\frac{x}{\sqrt{x^2+1}}$ ☐ C $\sqrt{x^2+1}$ ☐ D $\frac{\sqrt{x^2+1}}{x}$
52) $\sec\left(\sin^{-1}\frac{x}{3}\right) =$ ☐ A $\frac{x}{\sqrt{9-x^2}}$ ☐ B $\frac{3}{\sqrt{9-x^2}}$ ☐ C $\frac{\sqrt{9-x^2}}{3}$ ☐ D $\frac{\sqrt{9-x^2}}{x}$

53) $\cot\left(\sin^{-1}\frac{x}{3}\right) =$

☐ A $\frac{x}{\sqrt{9-x^2}}$

☐ B $\frac{3}{\sqrt{9-x^2}}$

☐ C $\frac{\sqrt{9-x^2}}{3}$

☐ D $\frac{\sqrt{9-x^2}}{x}$

54) $\tan\left(\sin^{-1}\frac{x}{3}\right) =$

☐ A $\frac{x}{\sqrt{9-x^2}}$

☐ B $\frac{3}{\sqrt{9-x^2}}$

☐ C $\frac{\sqrt{9-x^2}}{3}$

☐ D $\frac{\sqrt{9-x^2}}{x}$

55) $\cos\left(\sin^{-1}\frac{x}{3}\right) =$

☐ A $\frac{x}{\sqrt{9-x^2}}$

☐ B $\frac{3}{\sqrt{9-x^2}}$

☐ C $\frac{\sqrt{9-x^2}}{3}$

☐ D $\frac{\sqrt{9-x^2}}{x}$