

Evaluate the expression.

1. $\arcsin 1$	2. $\arcsin 4$
3. $\arcsin\left(-\frac{\sqrt{2}}{2}\right)$	4. $\arcsin\left(\frac{\sqrt{3}}{2}\right)$
5. $\arccos\left(\frac{\sqrt{2}}{2}\right)$	6. $\arccos\left(-\frac{\sqrt{3}}{2}\right)$
7. $\arctan(-\sqrt{3})$	8. $\arctan(-1)$

Find the exact value.

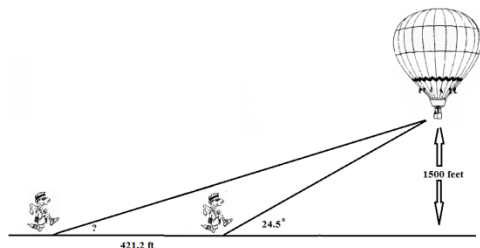
9. $\tan(\arctan(-5))$	10. $\sin\left(\arcsin\left(\frac{\pi}{6}\right)\right)$
11. $\arcsin\left(\cos\left(\frac{\pi}{3}\right)\right)$	12. $\tan(\arccos(0))$
13. $\sec\left(\arctan\left(\frac{12}{5}\right)\right)$	14. $\arcsin\left(\sin\left(\frac{2\pi}{3}\right)\right)$

Write an equivalent rational expression in terms of x.

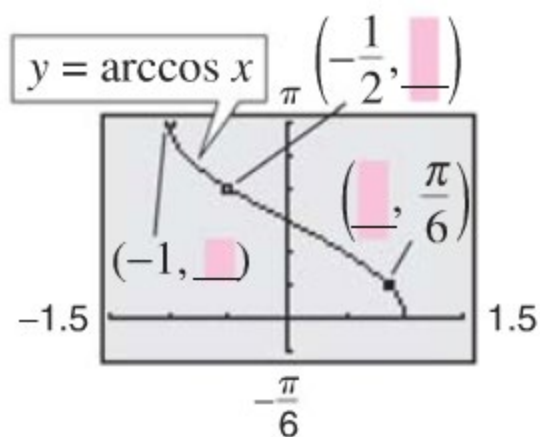
15. $\sec[\arcsin(x-1)]$	16. $\tan\left[\arccos\left(\frac{x}{2}\right)\right]$
17. $\sin\left[\arccos\left(\frac{x^2}{4-x^2}\right)\right]$	18. $\csc[\arcsin(10x)]$

19. An engineer erects a 125 foot vertical cellular-phone tower. Find the angle of elevation to the top of the tower from a point on level ground 75 feet from its base.

20. Two runners on an east-west highway are 421.2 feet apart heading east. A hot air balloon is flying ahead of them. The angle of elevation to the balloon of the runner closet to the balloon is 24.5° . If the hot air balloon is 1500 feet directly above a point on the highway east of both runners, what is the angle of elevation to the balloon of the runner the greatest distance from the balloon?



21. Determine the missing coordinates of the points on the graph of the function. (no calculator)



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