Quiz 3.1–3.3 Review

Sketch each inverse trig function, labeling each critical point, and fill in the corresponding information.

1. $y = \sin^{-1} x$
   a. Restricted Range:

2. $y = \cos^{-1} x$
   a. Restricted Range:

3. $y = \tan^{-1} x$
   a. Restricted range:
   b. Asymptotes:
   c. As x approaches positive infinity, the function approaches ____.
   d. As x approaches negative infinity, the function approaches ____.

4. $y = \csc^{-1} x$
   a. Restricted range:
   b. Asymptotes:
   c. As x approaches positive infinity, the function approaches ____.
   d. As x approaches negative infinity, the function approaches ____.

5. $y = \sec^{-1} x$
   a. Restricted range:
   b. Asymptotes:
   c. As x approaches positive infinity, the function approaches ____.
   d. As x approaches negative infinity, the function approaches ____.

6. $y = \cot^{-1} x$
   a. Restricted range:
   b. Asymptotes:
   c. As x approaches positive infinity, the function approaches ____.
   d. As x approaches negative infinity, the function approaches ____.

7. List the steps you would use to find the inverse function of $y = \sin x$.

Find the principal inverse value of each of the expressions below, in both degrees and radians.

8. $\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

9. $\cos^{-1}(0)$

10. $\tan^{-1}(1)$

11. $\sin^{-1}\left(\frac{1}{\sqrt{2}}\right)$

12. $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right)$

13. $x = \operatorname{arccsc}(2)$

14. $x = \sec^{-1}\left(\frac{2}{\sqrt{3}}\right)$

15. $x = \cot^{-1}\left(-\sqrt{3}\right)$

For more practice, finish in-class assignments, re-watch the 3.1 and 3.2 video, and ask questions at tutorials! You can also quiz yourself using this Khan Academy practice: https://goo.gl/3GrTXZ.

Good Luck!