

Find the angle(s) (given the value) where, $0^\circ \leq \theta < 360^\circ$. Round to the nearest hundredth of a degree.

1. $\sin \theta = 0.231$ $\theta = 13.356^\circ$
 $\theta = 166.644^\circ$ *RA 82.935°*
2. $\cos \theta = -0.123$ $\theta = 97.065^\circ$
 $\theta = 262.935^\circ$ *RA 77.794°*
3. $\tan \theta = 4.623$ $\theta = 77.794^\circ$
 $\theta = 257.794^\circ$ *307.095°*
4. $\sec \theta = 1.658$ $\cos \theta = \frac{1}{1.658}$
 $\theta = 52.905^\circ$ *RA = 25.219°*
5. $\csc \theta = -2.347$ $\sin \theta = \frac{1}{2.347}$
 $\theta = 205.219^\circ$
 $\theta = 334.781^\circ$

Find the angle(s) (given the value) where, $0 \leq \theta < 2\pi$. Round to the nearest hundredth of a radian.

6. $\cos \theta = .4681$ $\theta = 1.084$
 $\theta = 5.200$ *re 1.302*
7. $\tan \theta = -3.624$ $\theta = 1.840$
 $\theta = 4.982$ *re 1.302*
8. $\sec \theta = -1.739$ $\cos \theta = \frac{1}{-1.739}$
 $\theta = 2.183$
 $\theta = 4.100$ *re 1.302*
9. $\sin \theta = 0.519$ $\theta = .546$
 $\theta = 2.596$
10. $\cos \theta = 0.683$ $\theta = .819$
 $\theta = 5.464$

Sketch the graph of the function. Fill in each blank.

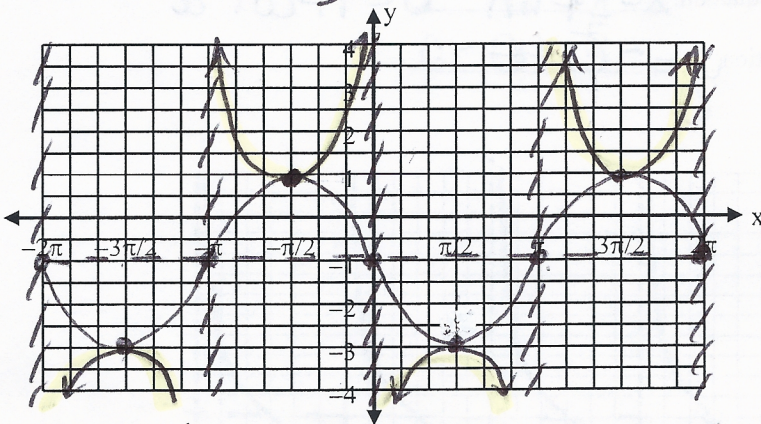
11. $y = 2 \sec\left(\theta + \frac{\pi}{2}\right) - 1$

a = 2 b = 1 Period: $\frac{\pi}{2}$

Phase Shift: $\frac{\pi}{2} \leftarrow$ V. Shift: 1 ↓

Asymptotes: $x = \pi n$

Domain: $\{x | x \neq \pi n, n \in \mathbb{Z}\}$ Range: $(-\infty, -3] \cup [1, \infty)$



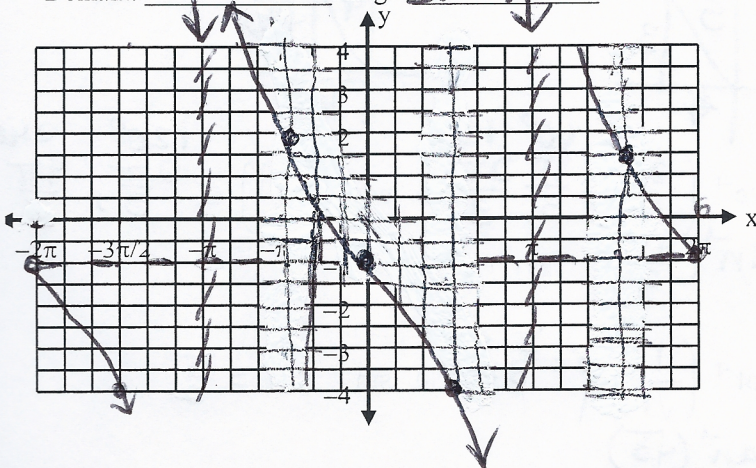
13. $y = 3 \tan \frac{1}{2} \theta - 1$

a = 3 b = $\frac{1}{2}$ Period: 2π

Phase Shift: none V. Shift: 1 ↓

Asymptotes: $x = \pi + 2\pi n$

Domain: $\{x | x \neq \pi + 2\pi n, n \in \mathbb{Z}\}$ Range: $(-\infty, \infty)$



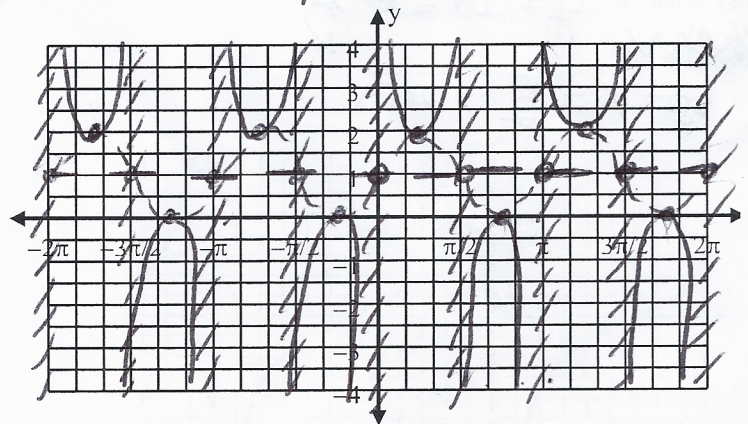
12. $y = \csc 2\theta + 1$

a = 1 b = 2 Period: π

Phase shift: none V. Shift: 1 ↑

Asymptotes: $x = \frac{\pi}{2} n$

Domain: $\{x | x \neq \frac{\pi}{2} n, n \in \mathbb{Z}\}$ Range: $(-\infty, 0] \cup [2, \infty)$



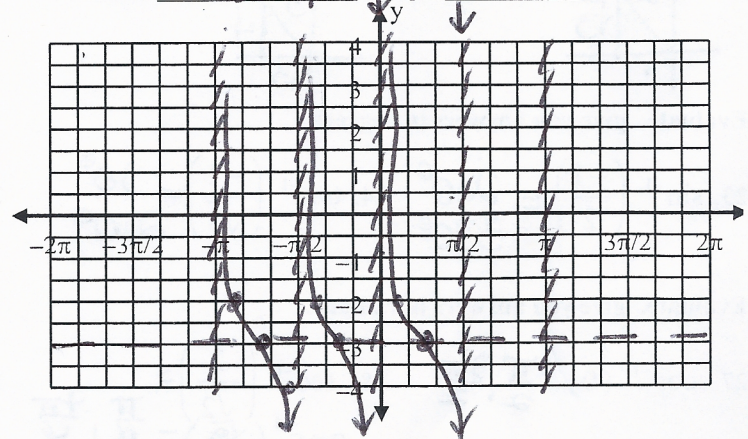
14. $y = \cot 2(\theta + \pi) - 3$

a = 1 b = 2 Period: $\frac{\pi}{2}$

Phase shift: $\pi \leftarrow$ V. Shift: 3 ↓

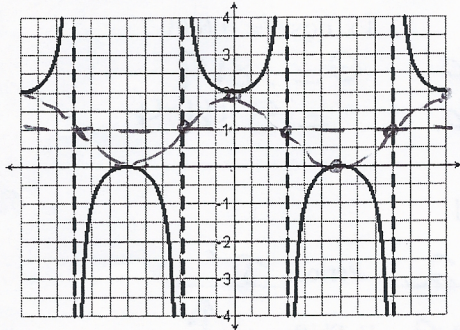
Asymptotes: $x = \frac{\pi}{2} n$

Domain: $\{x | x \neq \frac{\pi}{2} n, n \in \mathbb{Z}\}$ Range: $(-\infty, \infty)$

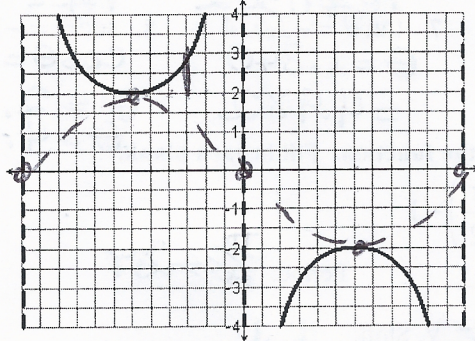


Fill in the information and write the equations for the given graphs:

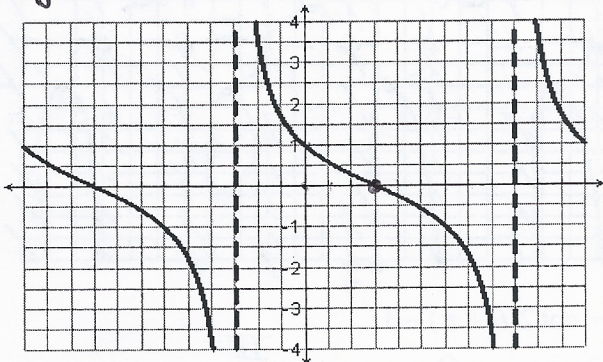
15. period 2π $b = 1$
 $a = 1$ $d = 1 \uparrow$ $c = \text{none if sec}$
 asy equation: $X = \frac{\pi}{2} + \pi n$
 equation: $y = \sec \theta + 1$



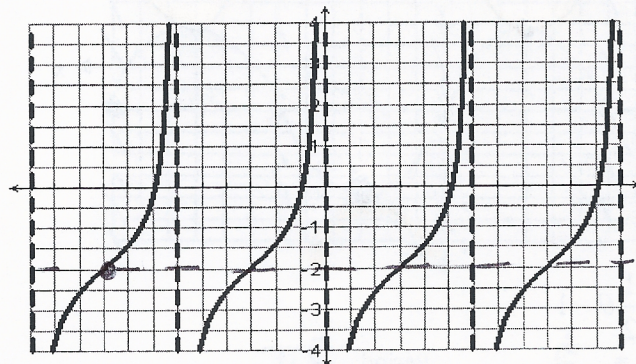
16. period 4π $b = \frac{1}{2}$
 $a = 1$ $d = 0$ $c = \text{none if } a^- \text{ \& csc}$
 asy equation: $X = 2\pi n$ $\pi \leftarrow \text{if } a^+ \text{ \& sec}$
 equation: $y = -\csc \theta$



17. period 2π $b = \frac{1}{2}$
 $a = 1$ $d = 0$ $c = \frac{\pi}{2} \leftarrow$
 asy equation: $y = \cot \frac{1}{2} \theta$
 equation: $X = \frac{\pi}{2} + 2\pi n$



18. period π $b = \frac{1}{2}$
 $a = 1$ $d = 2 \downarrow$ $c = \frac{\pi}{2} \leftarrow \text{if } \tan^+ \text{ \& } a^+$
 asy equation: $X = \pi + \pi n$ $0 \leftarrow \text{if } \cot^- \text{ \& } a^-$
 equation: $y = -\cot \theta - 2$



Draw a reference triangle and evaluate each of the following expressions.

19. $\sin(\arccos \frac{1}{2}) = \frac{\sqrt{3}}{2}$ 20. $\sin(\arccos \frac{3}{5}) = \frac{4}{5}$

21. $\tan(\arcsin \frac{3}{5}) = \frac{3}{4}$ 22. $\cos(\arcsin \frac{1}{4}) = \frac{\sqrt{15}}{4}$

Evaluate. give you answers in degrees.

23. $\sin^{-1}(\frac{-1}{2}) = 210^\circ, 330^\circ$ 24. $\tan^{-1}(\frac{-1}{\sqrt{3}}) = 30^\circ, 210^\circ$

25. $\csc^{-1}(\frac{2}{\sqrt{3}}) = \frac{\pi}{3}, \frac{2\pi}{3}$ 26. $\cos^{-1}(\frac{-1}{2}) = 120^\circ, 240^\circ$

Evaluate. give you answers in radians.

27. $\cos^{-1}(0) = \frac{\pi}{2}, \frac{3\pi}{2}$ 28. $\sec^{-1}(\frac{2}{\sqrt{2}}) = \frac{\pi}{4}, \frac{7\pi}{4}$

29. $\cot^{-1}(\frac{1}{\sqrt{3}}) = \frac{\pi}{3}, \frac{4\pi}{3}$ 30. $\sin^{-1}(1) = \frac{\pi}{2}$