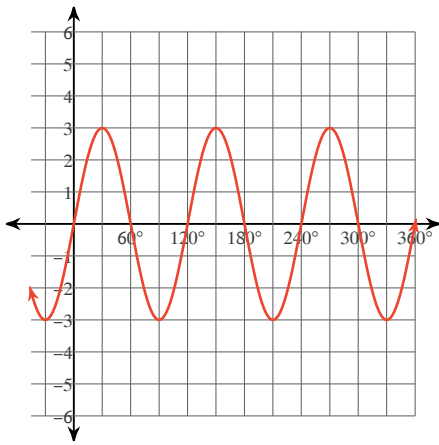


Unit 2 Review

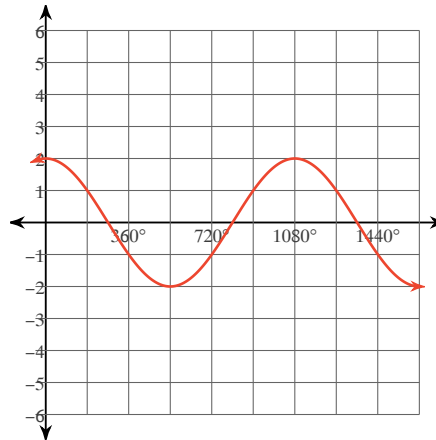
Find the amplitude and the period. Then sketch the graph.

1) $y = 3\sin 3\theta$



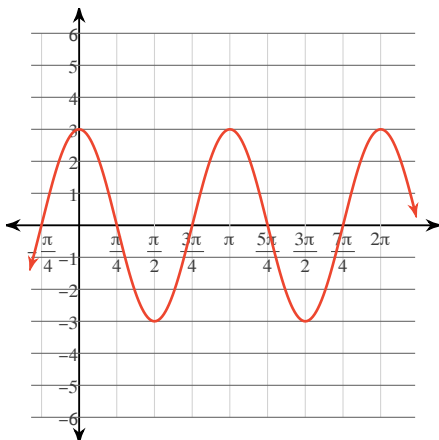
Amplitude: 3
Period: 120°

2) $y = 2\cos \frac{\theta}{3}$



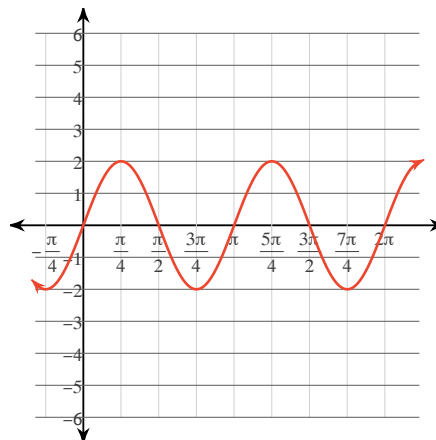
Amplitude: 2
Period: 1080°

3) $y = 3\cos 2\theta$



Amplitude: 3
Period: π

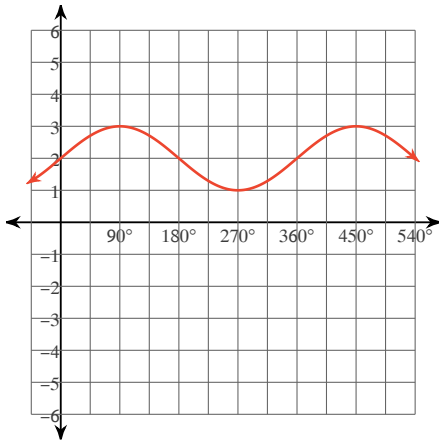
4) $y = 2\sin 2\theta$



Amplitude: 2
Period: π

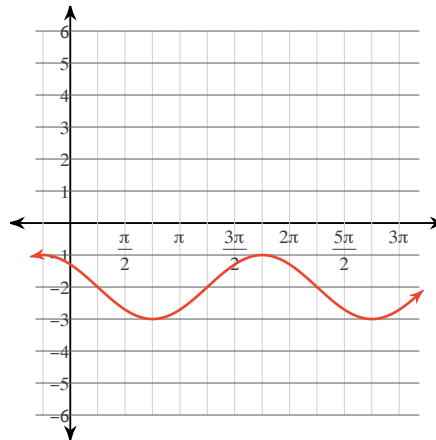
Find the phase shift and the vertical shift. Then sketch the graph.

5) $y = 2 + \cos(\theta + 270)$



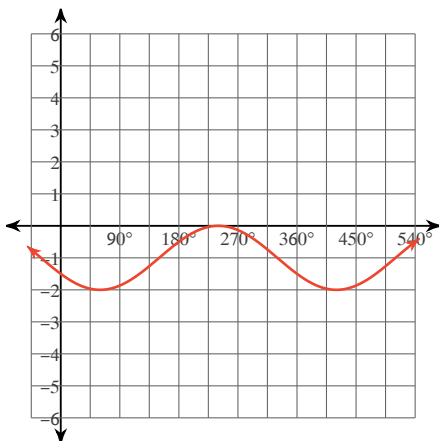
Phase shift: Left 270°
Vert. shift: Up 2

6) $y = \cos\left(\theta + \frac{\pi}{4}\right) - 2$



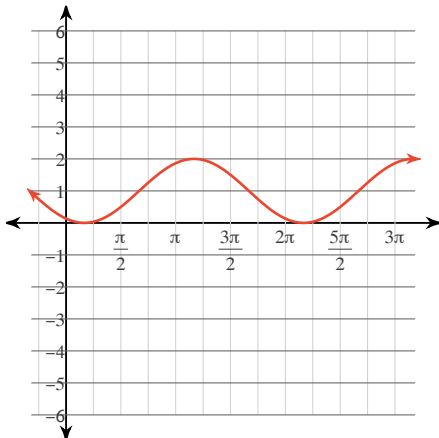
Phase shift: Left $\frac{\pi}{4}$
Vert. shift: Down 2

7) $y = -1 + \sin(\theta - 150)$



Phase shift: Right 150°
Vert. shift: Down 1

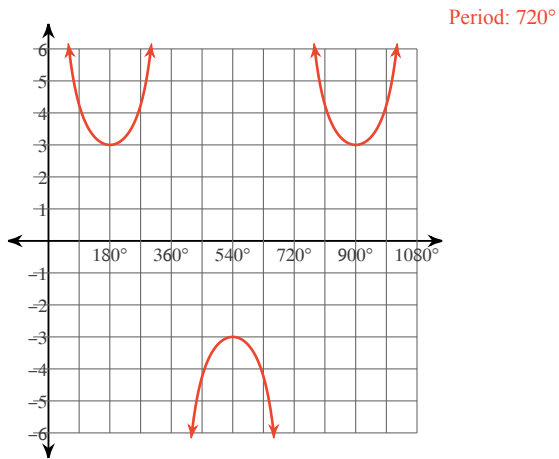
8) $y = \sin\left(\theta - \frac{2\pi}{3}\right) + 1$



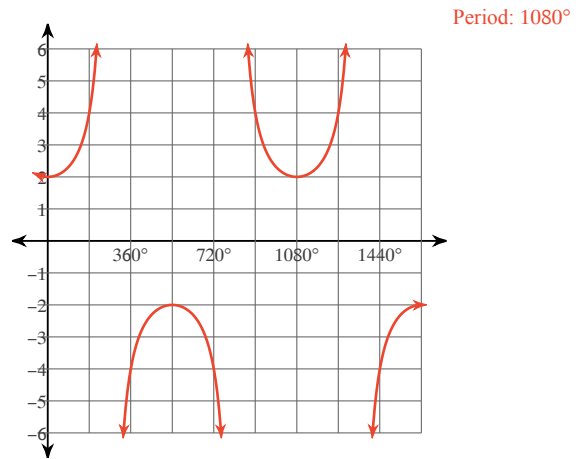
Phase shift: Right $\frac{2\pi}{3}$
Vert. shift: Up 1

Find the period. Then sketch the graph.

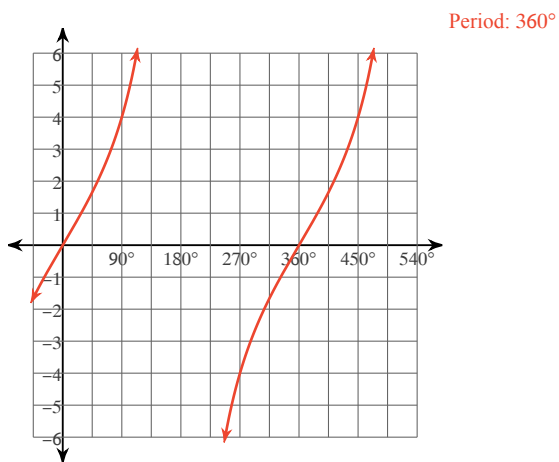
9) $y = 3\csc \frac{\theta}{2}$



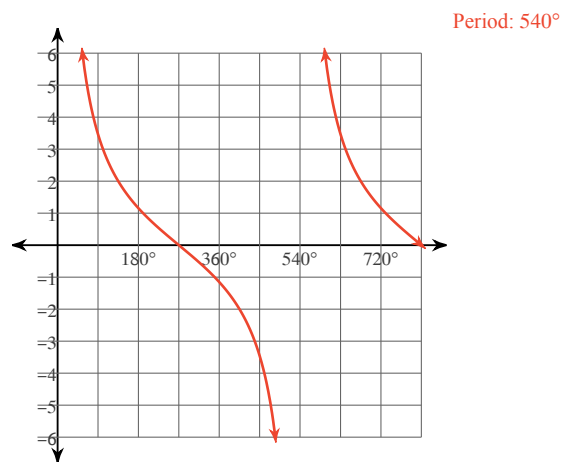
10) $y = 2\sec \frac{\theta}{3}$



11) $y = 4\tan \frac{\theta}{2}$

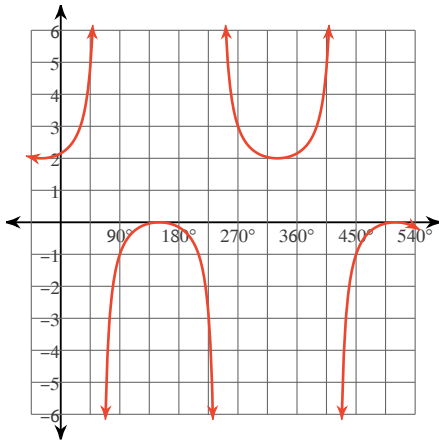


12) $y = 2\cot \frac{\theta}{3}$



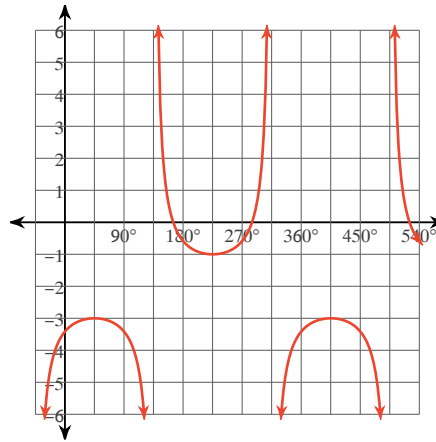
Find the phase shift and the vertical shift. Then sketch the graph.

13) $y = 1 + \sec(\theta + 30)$



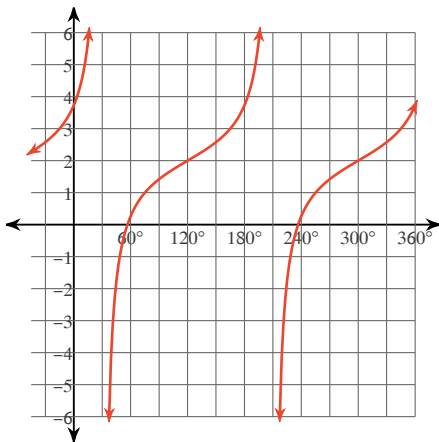
Phase shift: Left 30°
Vert. shift: Up 1

14) $y = \csc(\theta + 225) - 2$



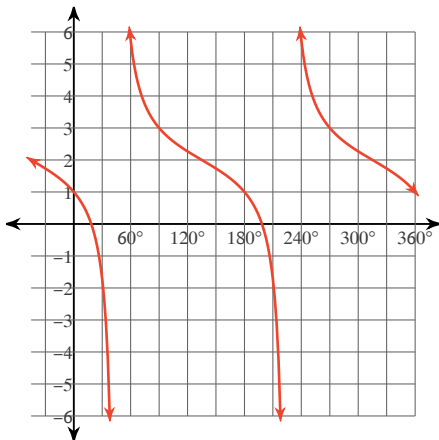
Phase shift: Left 225°
Vert. shift: Down 2

15) $y = \tan(\theta + 60) + 2$



Phase shift: Left 60°
Vert. shift: Up 2

16) $y = 2 + \cot(\theta - 225)$



Phase shift: Right 225°
Vert. shift: Up 2

Solve each equation for $0 \leq \theta < 360$.

$$17) -\frac{1}{2} \cdot \cos \theta = -\frac{\sqrt{2}}{4}$$
$$\{45, 315\}$$

$$18) 6\cos \frac{\theta}{3} = 3$$
$$\{180\}$$

$$19) -\sin \theta = 2$$

No solution.

$$20) -4\sqrt{2} = -8\sin -3\theta$$
$$\{75, 105, 195, 225, 315, 345\}$$

Solve each equation for $0 \leq \theta < 2\pi$.

$$21) -\frac{7}{2} = -3 + \sin \theta$$
$$\left\{ \frac{7\pi}{6}, \frac{11\pi}{6} \right\}$$

$$22) -5 + \sin 4\theta = -6$$
$$\left\{ \frac{3\pi}{8}, \frac{7\pi}{8}, \frac{11\pi}{8}, \frac{15\pi}{8} \right\}$$

$$23) -\frac{1}{2} \cdot \cos \theta = -\frac{\sqrt{3}}{4}$$

$$\left\{ \frac{\pi}{6}, \frac{11\pi}{6} \right\}$$

$$24) -\frac{2}{3} \cdot \cos 2\theta = -\frac{1}{3}$$

$$\left\{ \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6} \right\}$$

Find all solutions to each equation in degrees.

$$25) -3\sqrt{2} = 6\sin -3\theta$$

$$\{-75 - 120n, -105 - 120n\}$$

$$26) -4 + \cos \frac{\theta}{4} = -3$$

$$\{1440n\}$$

Find all solutions to each equation in radians.

$$27) -\frac{7}{2} = -4 + \cos \frac{\theta}{2}$$

$$\left\{ \frac{10\pi}{3} + 4\pi n, \frac{2\pi}{3} + 4\pi n \right\}$$

$$28) 5 + \sin -\theta = \frac{10 + \sqrt{2}}{2}$$

$$\left\{ -\frac{3\pi}{4} - 2\pi n, -\frac{\pi}{4} - 2\pi n \right\}$$

Solve each equation for $0 \leq \theta < 360$.

$$29) \frac{-9 + 2\sqrt{3}}{3} = -3 + \csc \theta$$
$$\{60, 120\}$$

$$30) 3\sec \theta = -3\sqrt{2}$$
$$\{135, 225\}$$

$$31) -5 = -4 + \tan \theta$$
$$\{135, 315\}$$

$$32) \sqrt{3} = -3\cot \theta$$
$$\{120, 300\}$$