Name:_____ Class:_____ Date:_____

Precalculus-G11-Ch4-Test

Indicate the answer choice that best completes the statement or answers the question.

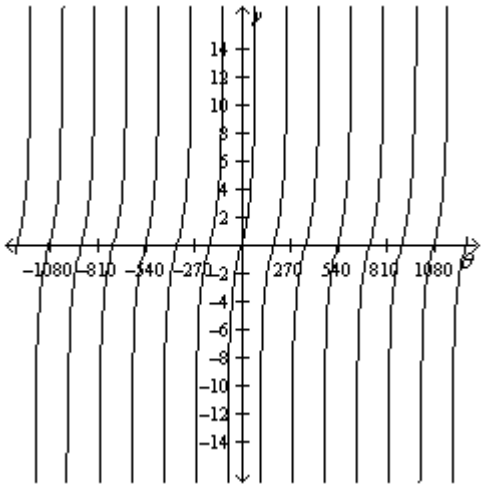
1. Find the exact value of $\tan\frac{4\pi}{3}$.

   a. $-\sqrt{3}$ b. $\sqrt{3}$

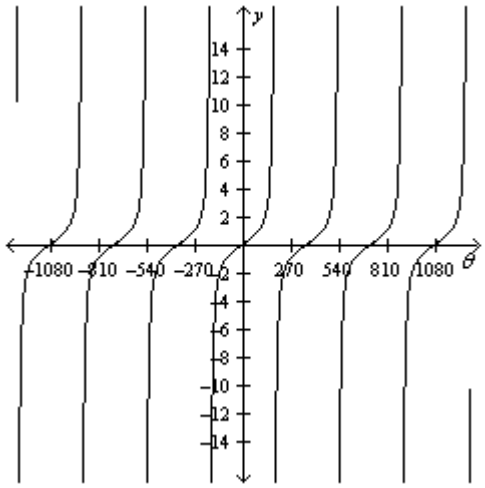
   c. $\frac{\sqrt{3}}{3}$ d. undefined

2. Graph $y = 6\tan\frac{1}{2}\theta$.

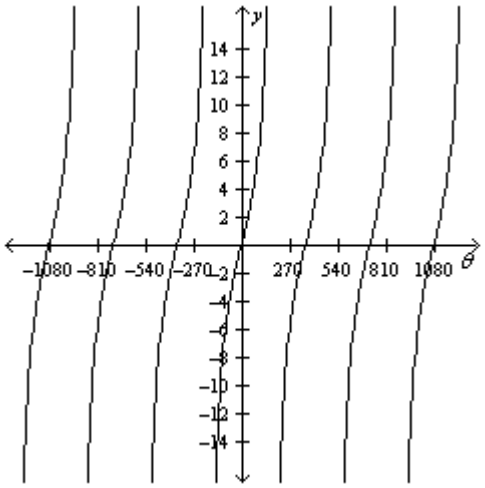
a.



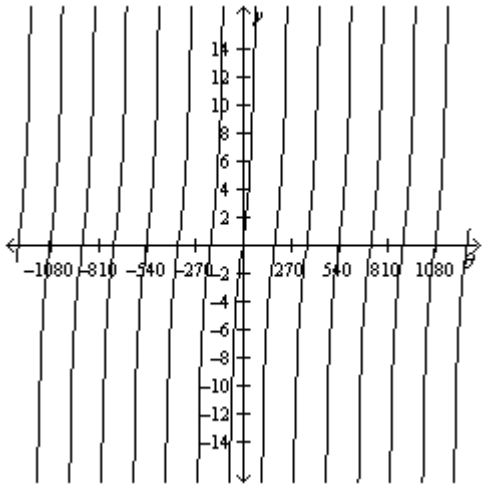
b.



c.



d.

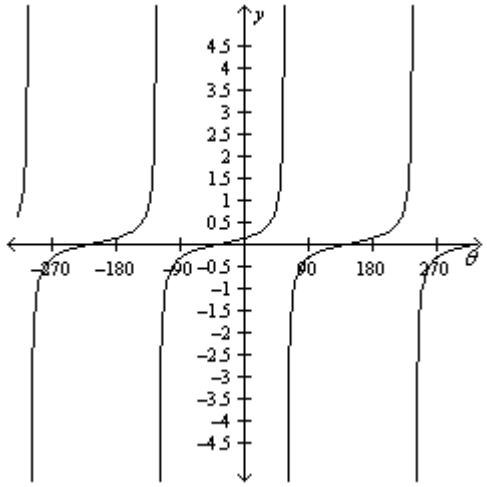


Name:_____ Class:_____ Date:_____

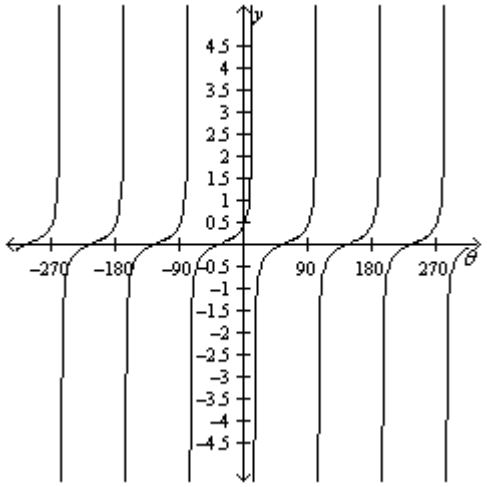
Precalculus-G11-Ch4-Test

3. Determine the amplitude, period, and phase shift for $y = \frac{1}{5}\tan(\theta + 30°)$ and use them to plot the graph of the function.

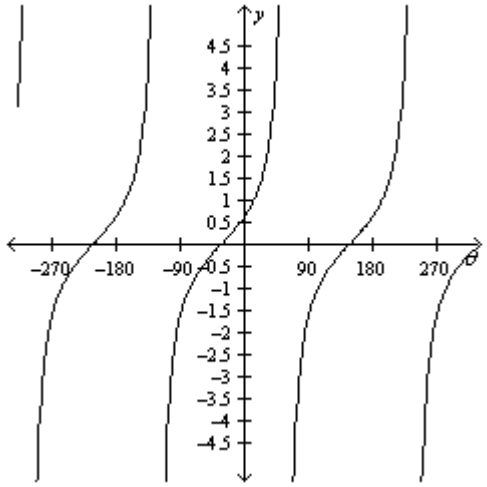
a. amplitude = $\frac{1}{5}$; period = 180°; phase shift = –30°



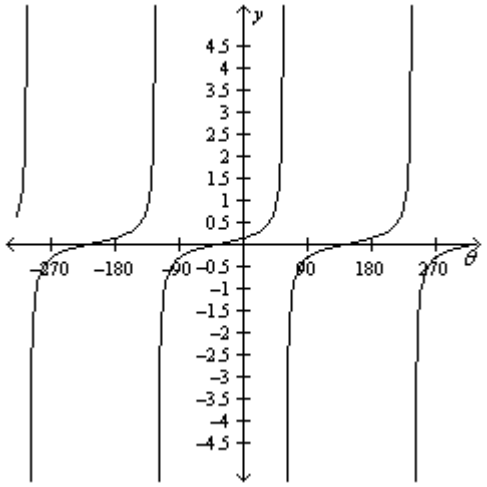
b. amplitude = does not exist; period = 180°; phase shift = –30°



c. amplitude = does not exist; period = 180°; phase shift = 30°



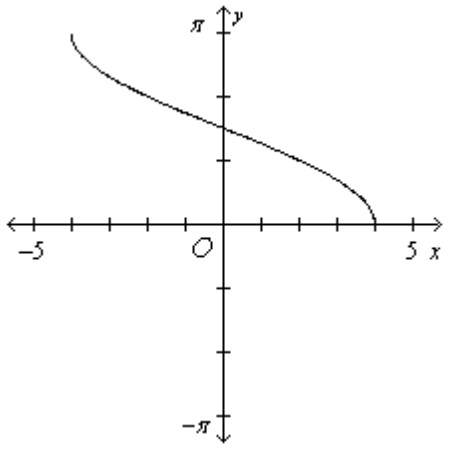
d. amplitude = does not exist; period = 180°; phase shift = –30°



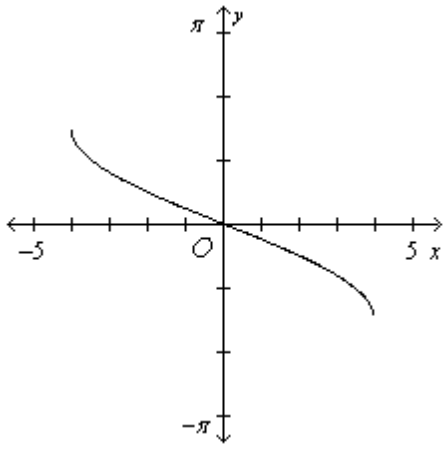
Precalculus-G11-Ch4-Test

4. Graph $y = \text{Cos}^{-1}\left(-\frac{1}{4}x\right)$ on the interval $-5 \le x \le 5$.

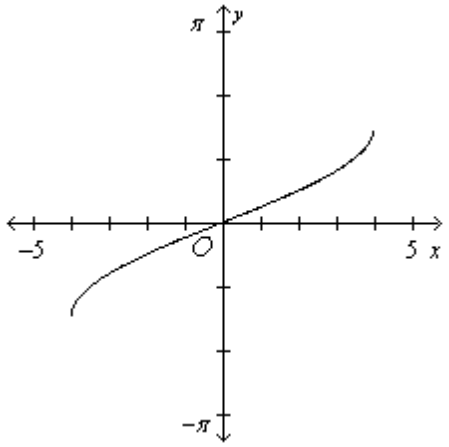
a.



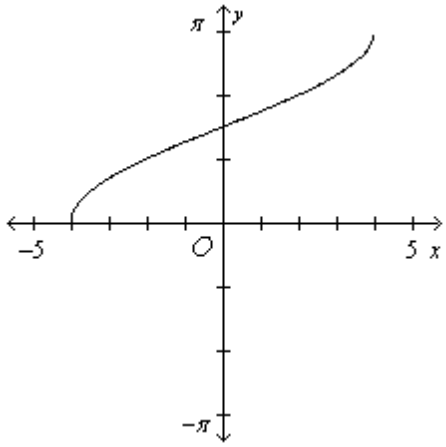
b.



c.



d.



In the unit circle a point (1,-2) lies on the terminal side of an angle θ in standard position. Find the exact value of cot θ

5. (–1, 5)

a. $\sin\theta = \frac{\sqrt{26}}{5}$, $\cos\theta = -\sqrt{26}$, $\tan\theta = -\frac{1}{5}$, $\csc\theta = \frac{5\sqrt{26}}{26}$, $\sec\theta = -\frac{\sqrt{26}}{26}$, $\cot\theta = -5$

b. $\sin\theta = -\frac{\sqrt{26}}{26}$, $\cos\theta = \frac{5\sqrt{26}}{26}$, $\tan\theta = -5$, $\csc\theta = -\sqrt{26}$, $\sec\theta = \frac{\sqrt{26}}{5}$, $\cot\theta = -\frac{1}{5}$

c. $\sin\theta = \frac{5\sqrt{26}}{26}$, $\cos\theta = -\frac{\sqrt{26}}{26}$, $\tan\theta = -5$, $\csc\theta = \frac{\sqrt{26}}{5}$, $\sec\theta = -\sqrt{26}$, $\cot\theta = -\frac{1}{5}$

d. $\sin\theta = 1$, $\cos\theta = -\frac{1}{5}$, $\tan\theta = -5$, $\csc\theta = 1$, $\sec\theta = -5$, $\cot\theta = -\frac{1}{5}$

Precalculus-G11-Ch4-Test

6. Suppose θ is an angle in the standard position whose terminal side is in Quadrant IV and $\cot\theta = -\frac{10}{7}$. Find the exact values of the five remaining trigonometric functions of θ.

a. $\sin\theta = \frac{\sqrt{149}}{7}, \cos\theta = -\frac{\sqrt{149}}{10}, \csc\theta = \frac{7}{\sqrt{149}}, \sec\theta = -\frac{10}{\sqrt{149}}, \tan\theta = -\frac{10}{7}$

b. $\sin\theta = -\frac{7}{\sqrt{149}}, \cos\theta = \frac{10}{\sqrt{149}}, \csc\theta = -\frac{\sqrt{149}}{10}, \sec\theta = \frac{\sqrt{149}}{7}, \tan\theta = -\frac{7}{10}$

c. $\sin\theta = -\frac{10}{\sqrt{149}}, \cos\theta = \frac{7}{\sqrt{149}}, \csc\theta = -\frac{\sqrt{149}}{10}, \sec\theta = \frac{\sqrt{149}}{7}, \tan\theta = -\frac{7}{10}$

d. $\sin\theta = -\frac{7}{\sqrt{149}}, \cos\theta = \frac{10}{\sqrt{149}}, \csc\theta = -\frac{\sqrt{149}}{7}, \sec\theta = \frac{\sqrt{149}}{10}, \tan\theta = -\frac{7}{10}$

Simplify each expression.

7. $\sin^2\theta\cos^2\theta - \cos^2\theta$

a. $-\cos^2\theta$

b. $1 - \cos^4\theta$

c. $\cos^4\theta$

d. $-\cos^4\theta$

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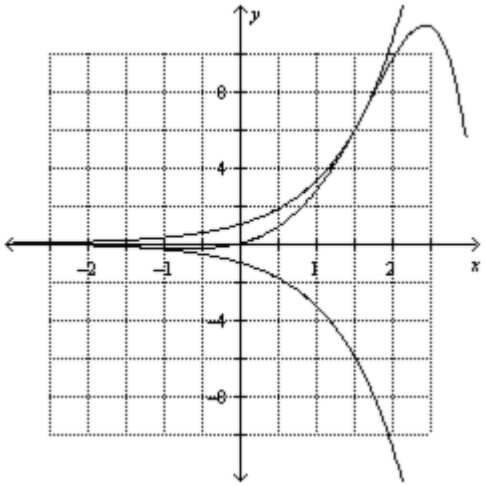
Precalculus-G11-Ch4-Test

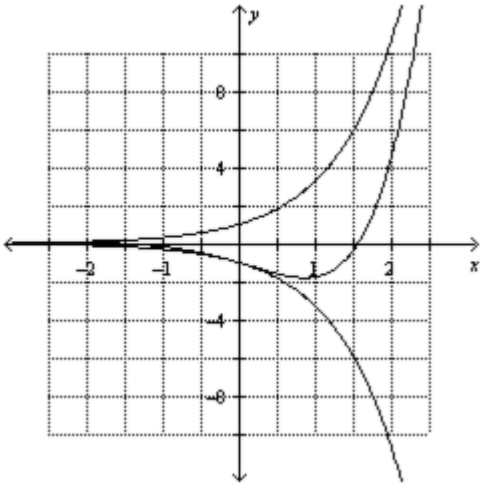
Graph *f*(*x*), –*f*(*x*), and the given function.

8. $y = 3.25^x \cos x$

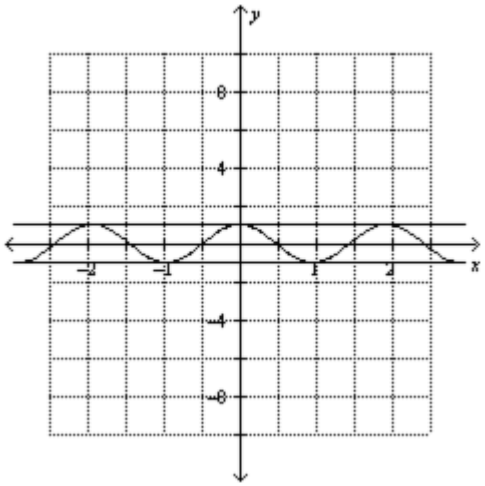
a.



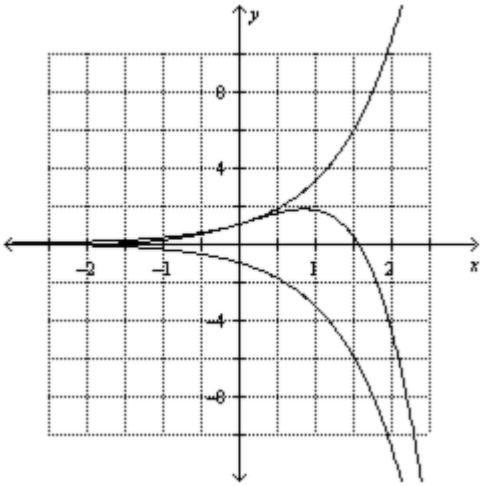
b.



c.



d.



9. Find the area of the triangle with $a = 3$ feet, $b = 4$ feet, and $c = 6$ feet. Round to the nearest tenth.

a. 50 ft^2 b. 53 ft^2

c. 55 ft^2 d. 54 ft^2

Precalculus-G11-Ch4-Test

10. Suppose θ is an angle in the standard position whose terminal side is in Quadrant IV and $\cot\theta = -\frac{3}{7}$. Find the exact values of the five remaining trigonometric functions of θ.

a. $\sin\theta = -\frac{7}{\sqrt{58}}, \cos\theta = \frac{3}{\sqrt{58}}, \csc\theta = -\frac{\sqrt{58}}{7}, \sec\theta = \frac{\sqrt{58}}{3}, \tan\theta = -\frac{7}{3}$

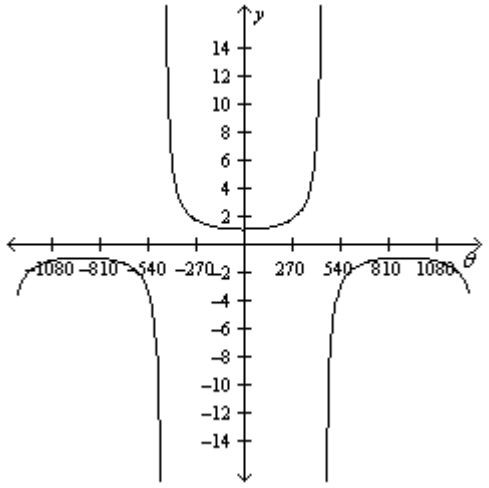
b. $\sin\theta = \frac{\sqrt{58}}{7}, \cos\theta = -\frac{\sqrt{58}}{3}, \csc\theta = \frac{7}{\sqrt{58}}, \sec\theta = -\frac{3}{\sqrt{58}}, \tan\theta = -\frac{3}{7}$

c. $\sin\theta = -\frac{3}{\sqrt{58}}, \cos\theta = \frac{7}{\sqrt{58}}, \csc\theta = -\frac{\sqrt{58}}{3}, \sec\theta = \frac{\sqrt{58}}{7}, \tan\theta = -\frac{7}{3}$

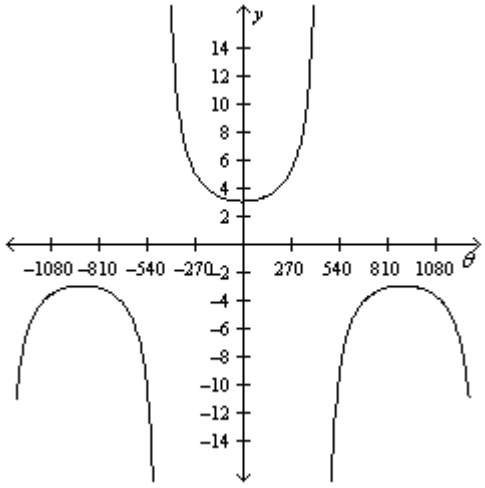
d. $\sin\theta = -\frac{7}{\sqrt{58}}, \cos\theta = \frac{3}{\sqrt{58}}, \csc\theta = -\frac{\sqrt{58}}{3}, \sec\theta = \frac{\sqrt{58}}{7}, \tan\theta = -\frac{7}{3}$

11. Graph $y = 3\sec\frac{1}{5}\theta$.

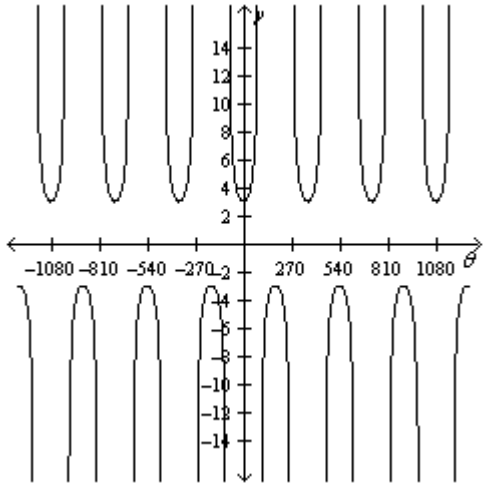
a.



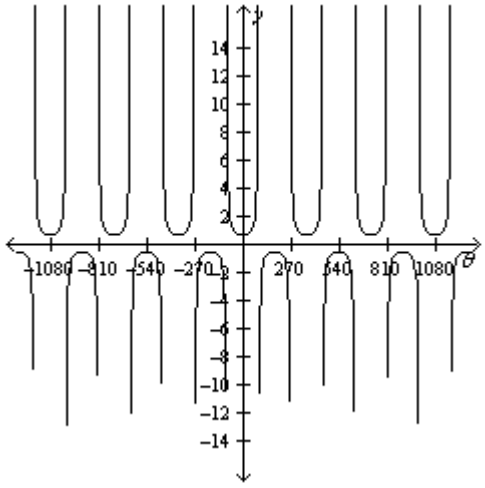
b.



c.



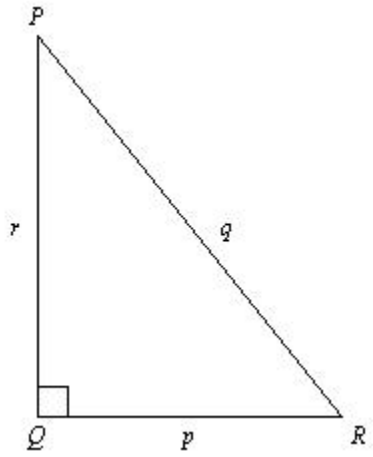
d.



12. How many triangles are there that satisfy the conditions $a = 13$, $b = 6$, $\alpha = 6°$?

a. 1 b. 0
c. 2 d. impossible to determine

13. Solve by using the measurements $\angle PQR = 90°$, $\angle QRP = 80°$, and $r = 15$. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.



a. $\angle P = 10°$, $q \approx 15.2$, $p \approx 2.6$
b. $\angle P = 10°$, $q \approx 2.6$, $p \approx 15.2$
c. $\angle P = 10°$, $q \approx 15.2$, $p \approx 14.8$
d. $\angle P = 10°$, $q \approx 85.1$, $p \approx 14.8$

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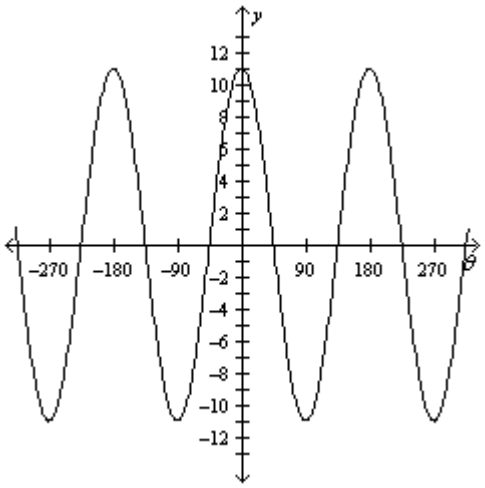
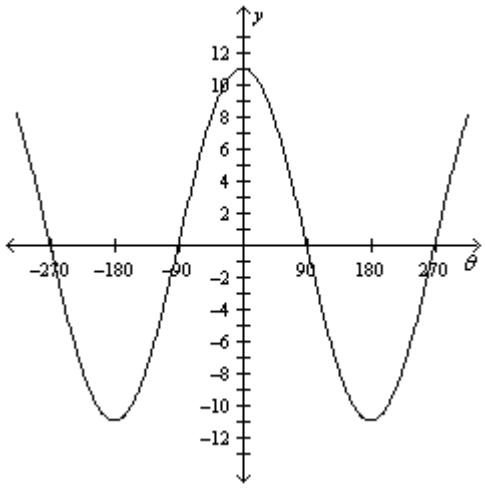
Precalculus-G11-Ch4-Test

14. Find the amplitude of $y = 11 \cos \theta$. Then graph the function.

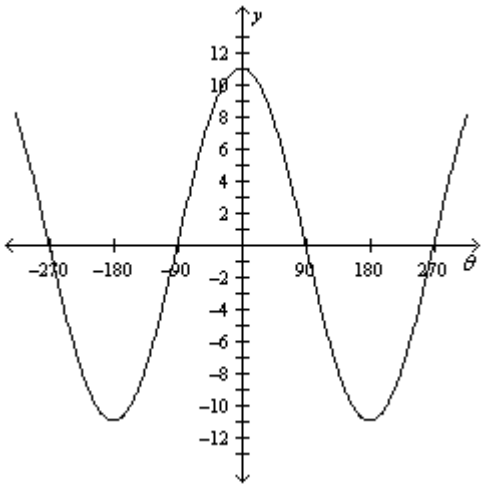
a. amplitude: 11



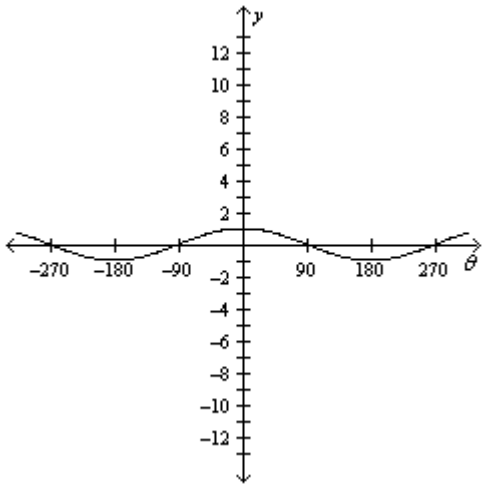
b. amplitude: does not exist



c. amplitude: 11



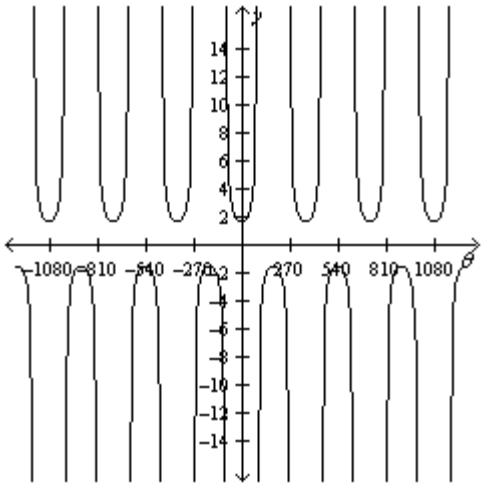
d. amplitude: 1



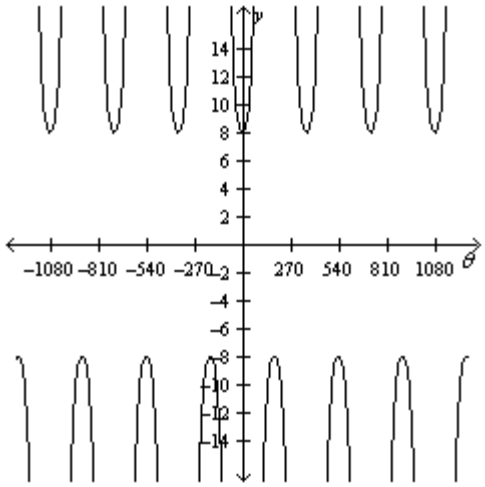
Precalculus-G11-Ch4-Test

15. Graph $y = 8 \sec \frac{1}{5} \theta$.

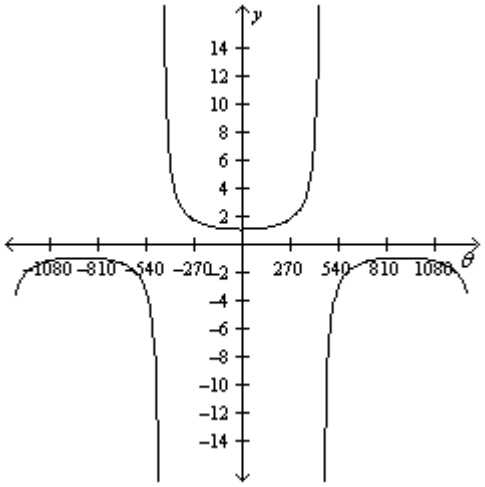
a.



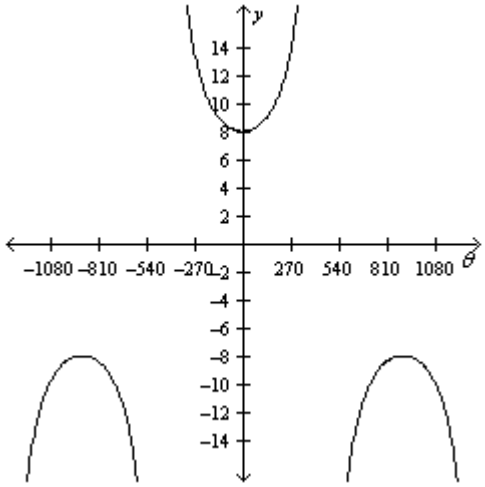
b.



c.



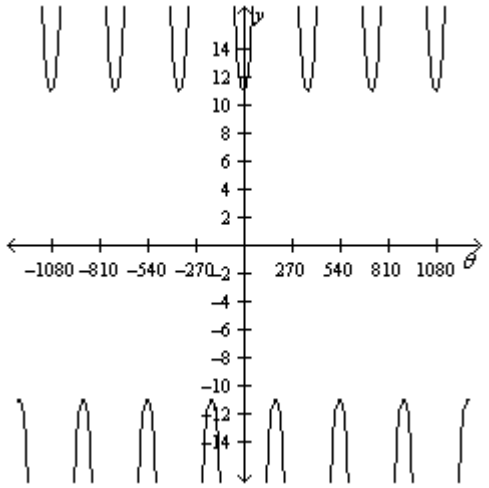
d.



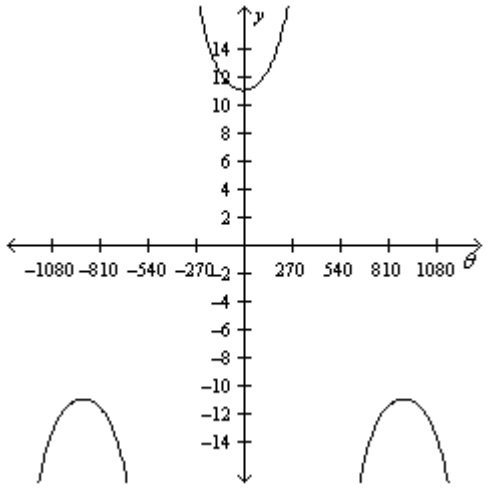
Precalculus-G11-Ch4-Test

16. Graph $y = 11 \sec \frac{1}{5}\theta$.

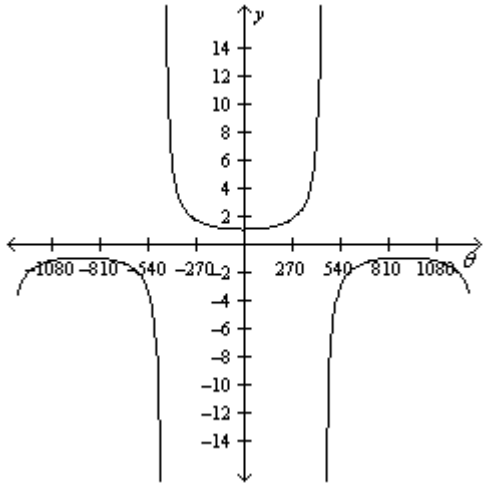
a.



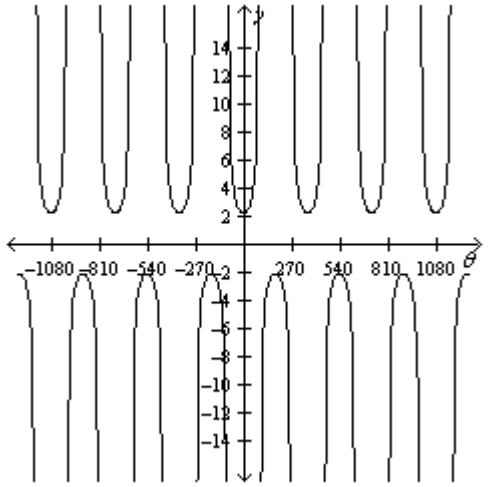
b.



c.



d.



17. Find one positive and one negative angle coterminal with an angle of $\frac{11\pi}{8}$.

a. $\frac{27\pi}{8}; \frac{-5\pi}{8}$ b. $\frac{13\pi}{8}; \frac{-9\pi}{8}$

c. $\frac{5\pi}{8}; \frac{-11\pi}{8}$ d. $\frac{9\pi}{8}; \frac{-13\pi}{8}$

18. Find the least positive angle measurement that is coterminal with –100°.

a. 170° b. 440°
c. 620° d. 260°

19. Find the least positive angle measurement that is coterminal with –70°.

a. 300° b. 292°
c. 290° d. 295°

20. Find one positive and one negative angle coterminal with an angle of 166°.

a. 526°, –194° b. 516°, –14°
c. 526°, –76 d. 256°, –76°

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