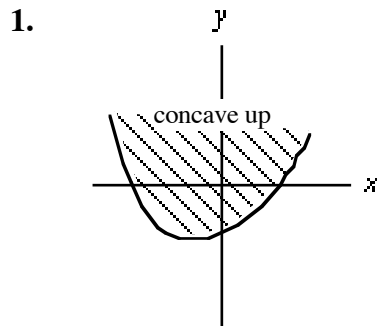


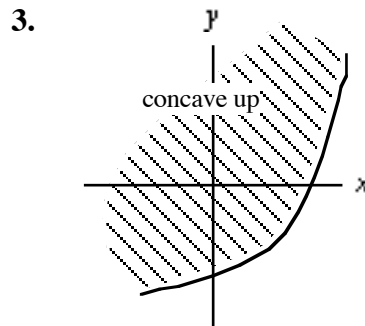
Chapter 4, Graphing Trigonometric Functions

ODD Focus Exercise Answers

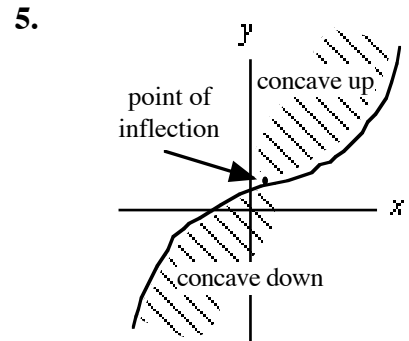
Sec. 4.1 Introduction to Graphing



Both increasing and decreasing.



Increasing only.



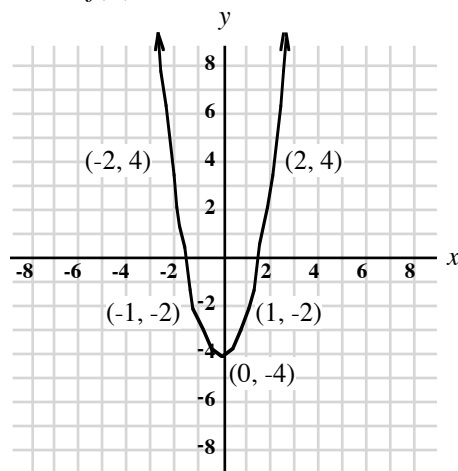
Increasing only.

7. Shifts up 6; is narrower than the standard graph

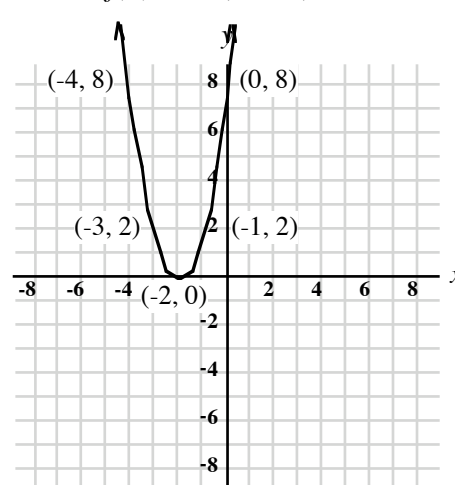
9. Shifts right 9; is standard and reflected

11. Shifts left 2 and down 1; is standard

13. $f(x) = 2x^2 - 4$

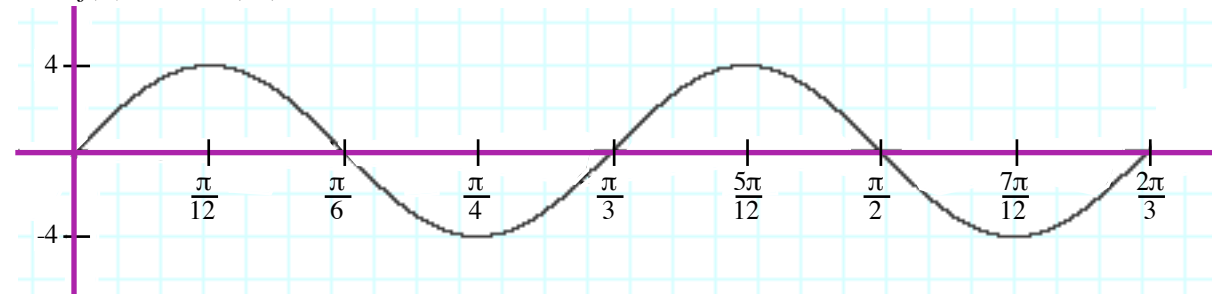


15. $f(x) = 2(x + 2)^2$

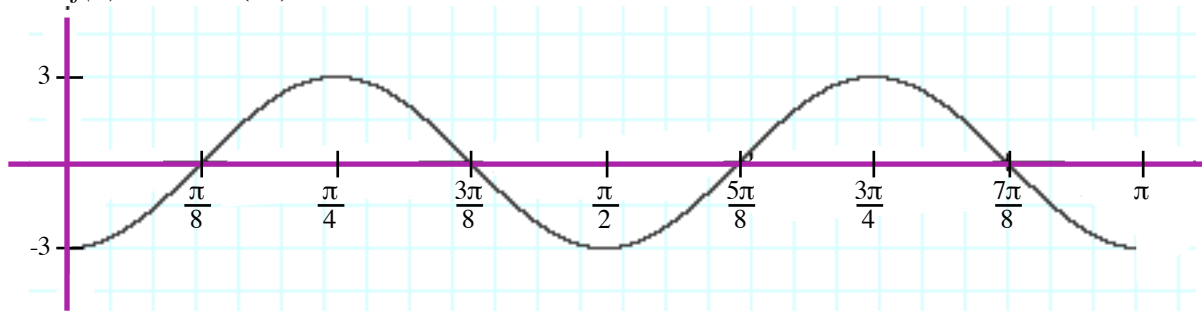


Section 4.2 Graphing the Sine and Cosine Functions

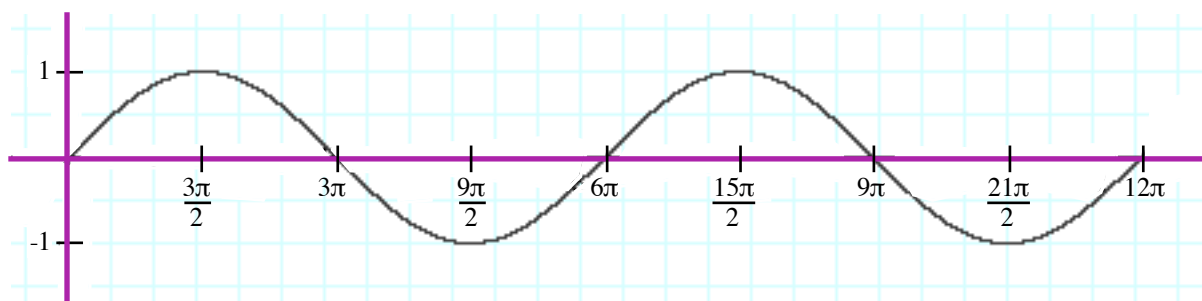
1. $f(x) = 4\sin(6x)$



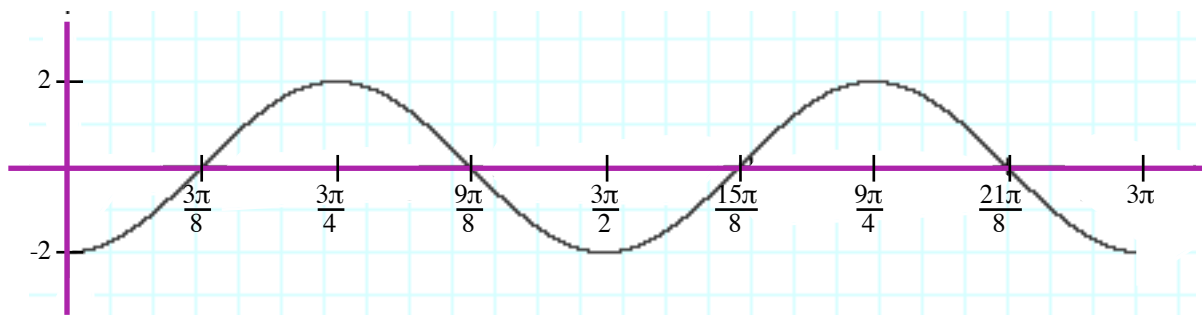
3. $f(x) = -3\cos(4x)$



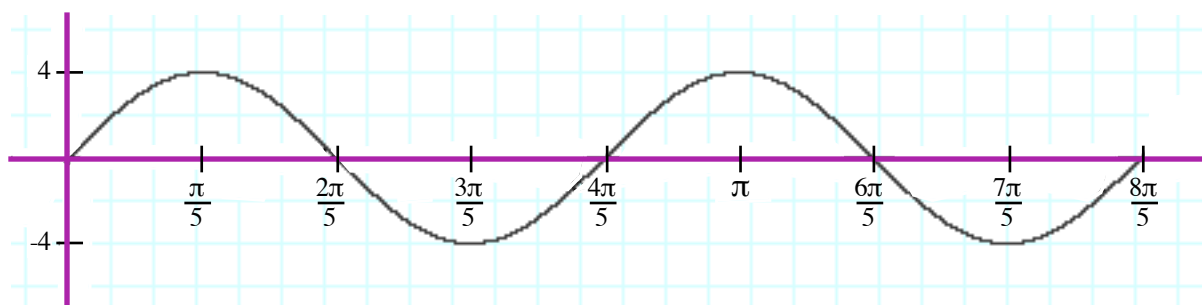
5. $f(x) = \sin\left(\frac{1}{3}x\right)$



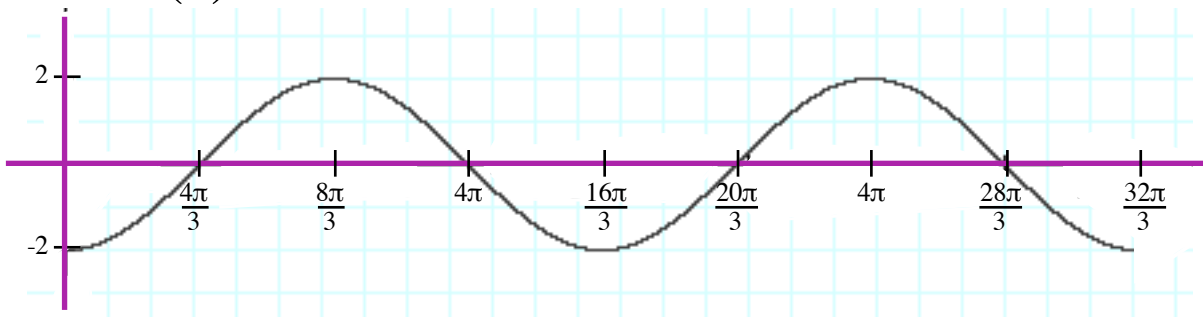
7. $f(x) = -2\cos\left(\frac{4}{3}x\right)$



9. $f(x) = 4\sin\left(\frac{5}{2}x\right)$



11. $f(x) = -2\cos\left(\frac{3}{8}x\right)$



Sec. 4.3 Identify the Function

1. $f(x) = 4\cos\left(\frac{1}{2}x\right)$

3. $f(x) = 5\sin(3x)$

5. $f(x) = -3\sin\left(\frac{16}{5}x\right)$

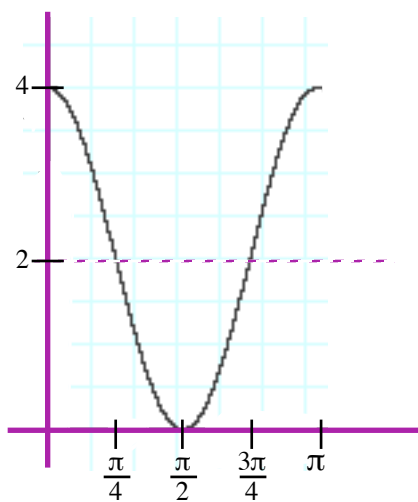
7. $f(x) = 2\cos\left(\frac{4}{3}x\right)$

9. $f(x) = -\frac{5}{2}\cos(4x)$

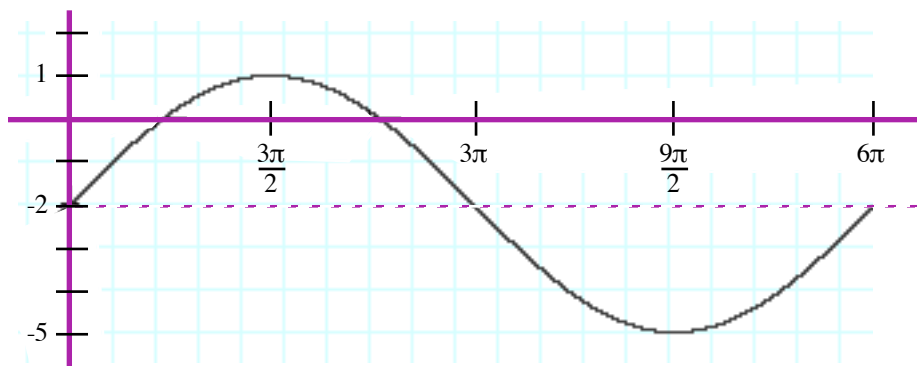
11. $f(x) = \sin\left(\frac{8}{3}x\right)$

Section 4.4 Graphing with Vertical and Horizontal Shifts

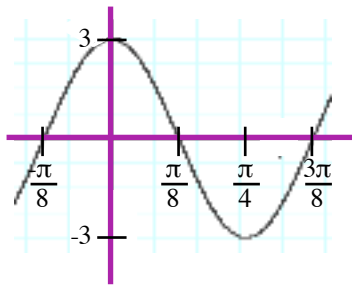
1. $f(x) = 2\cos(2x) + 2$



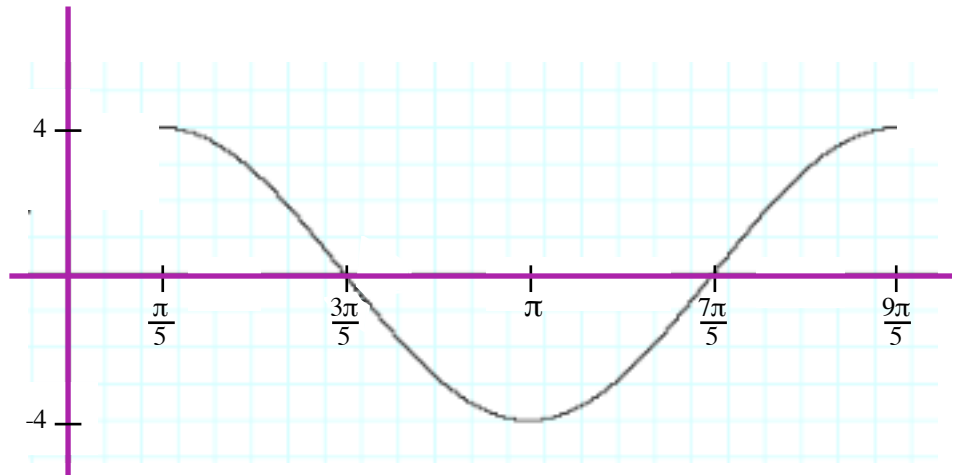
3. $f(x) = -2 + 3\sin\left(\frac{1}{3}x\right)$



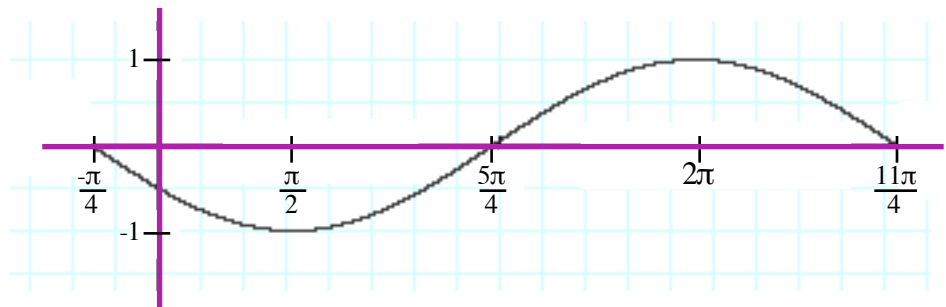
5. $f(x) = 3\sin\left(4x + \frac{\pi}{2}\right)$



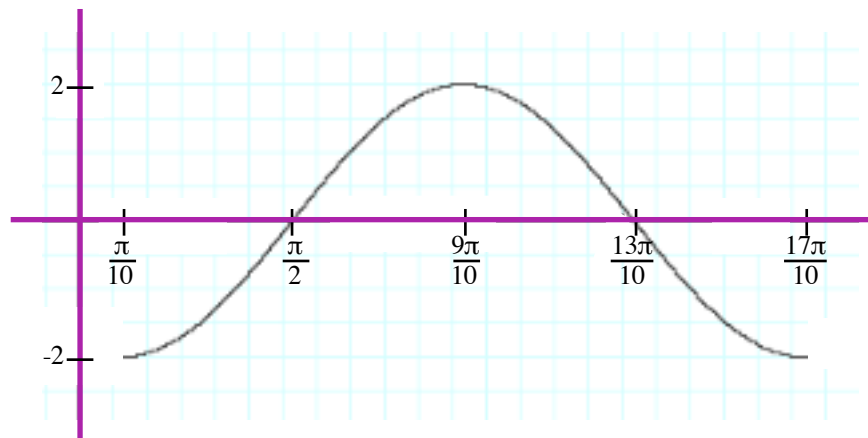
7. $f(x) = 4\cos\left(\frac{5}{4}x - \frac{\pi}{4}\right)$



9. $f(x) = -\sin\left(\frac{2}{3}x + \frac{\pi}{6}\right)$

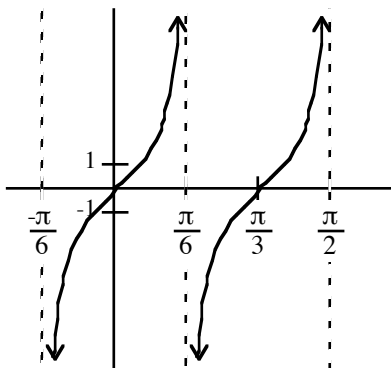


11. $f(x) = -2\cos\left(\frac{5}{4}x - \frac{\pi}{8}\right)$

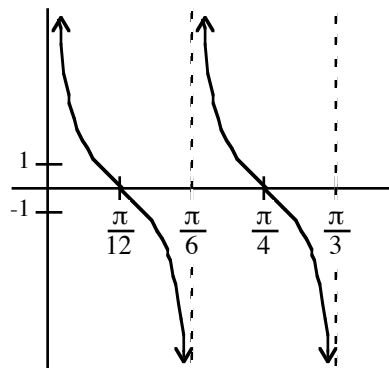


Section 4.7 Graphing Tangent and Cotangent

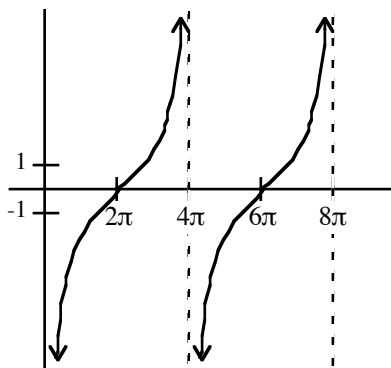
1. $f(x) = \tan(3x)$



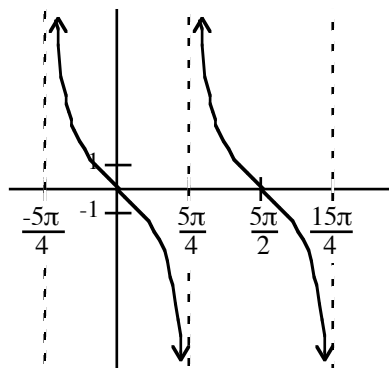
3. $f(x) = \cot(6x)$



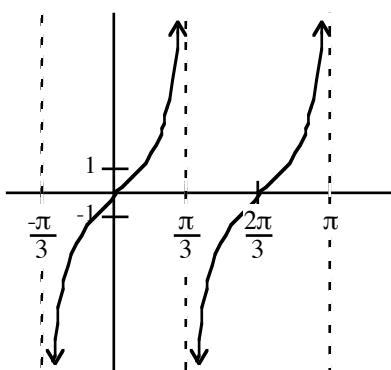
5. $f(x) = -\cot(\frac{1}{4}x)$



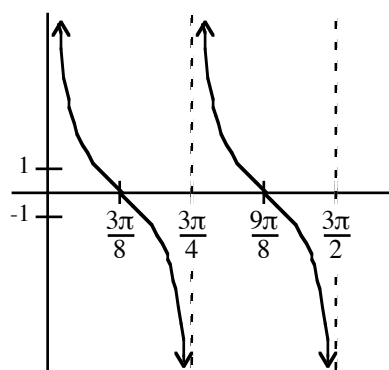
7. $f(x) = -\tan(\frac{2}{5}x)$



9. $f(x) = \tan(\frac{3}{2}x)$



11. $f(x) = \cot(\frac{4}{3}x)$



Section 4.8 Inverse Trigonometric Functions

1. $\frac{\pi}{6}$

3. $-\frac{\pi}{4}$

5. $\frac{\pi}{6}$

7. 0

9. $-\frac{\pi}{6}$

11. $-\frac{\pi}{3}$

13. $\frac{\pi}{4}$

15. $\frac{\pi}{4}$

17. $\frac{\pi}{6}$

19. π

21. $-\frac{\pi}{3}$

23. $\frac{\pi}{2}$

25. 0