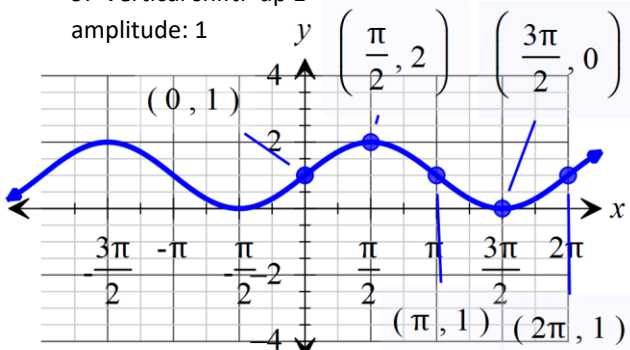
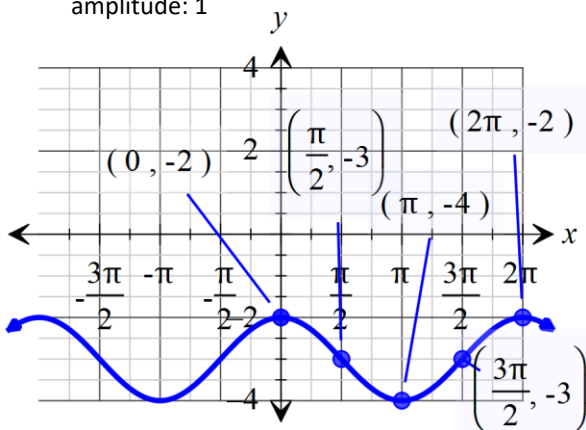


**SM3 8.1 answers**

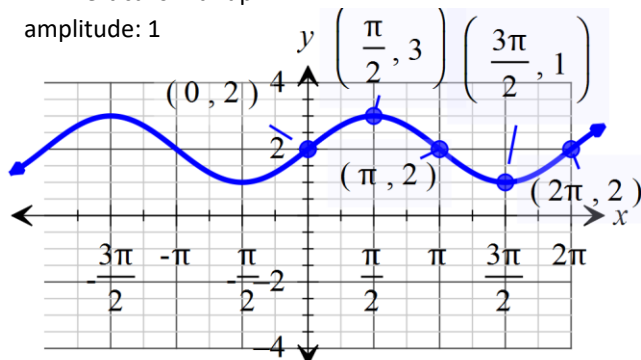
1. amplitude: 6  
Vertical shift: up 3
2. amplitude:  $\frac{1}{8}$   
Vertical shift: 0
3. amplitude: 1  
Vertical shift: down 2
4. amplitude: 1  
Vertical shift: 0
5. amplitude:  $\frac{1}{4}$   
Vertical shift: down  $\frac{3}{5}$
6. amplitude: 8  
Vertical shift: up 2
7. amplitude: 2  
Vertical shift: up 3
8. amplitude: 1  
Vertical shift: up 5
9. Vertical shift: up 1  
amplitude: 1



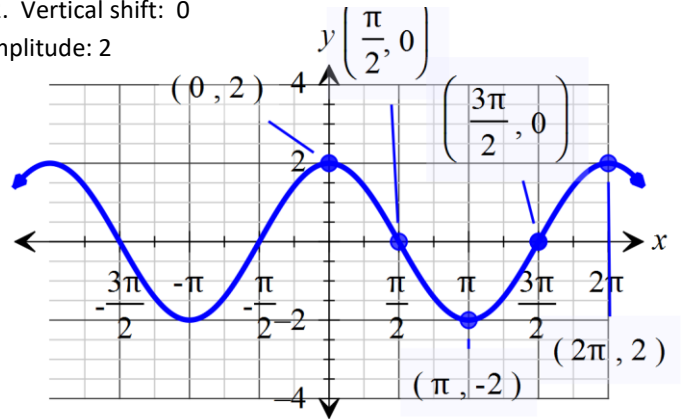
10. Vertical shift: down 3  
amplitude: 1



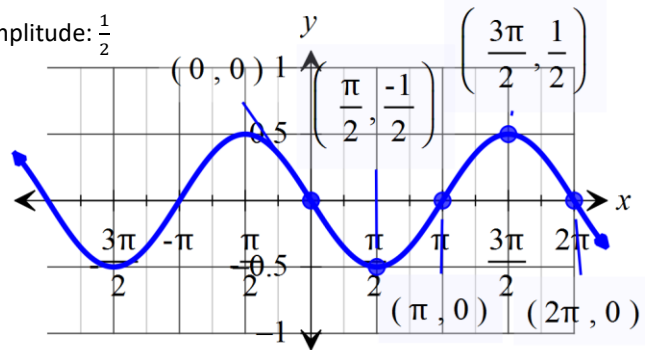
11. Vertical shift: up 2  
amplitude: 1



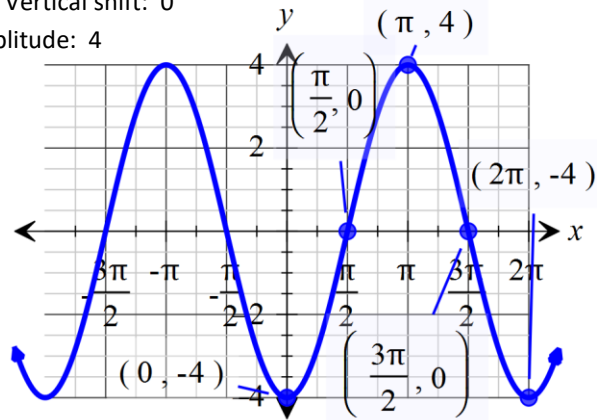
12. Vertical shift: 0  
amplitude: 2



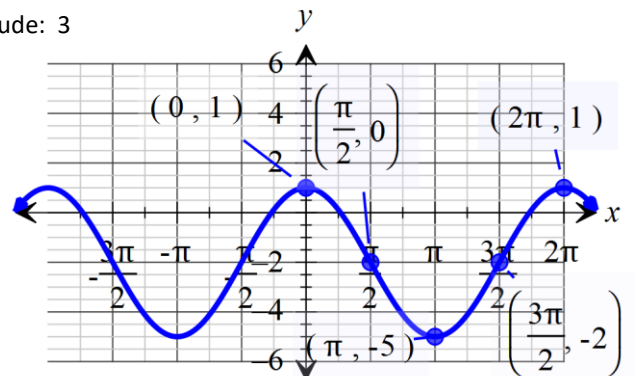
13. Vertical shift: 0  
amplitude:  $\frac{1}{2}$



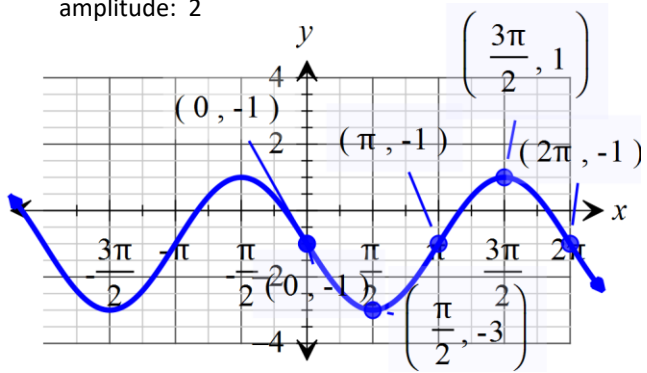
14. Vertical shift: 0  
amplitude: 4



15. Vertical shift: down 2  
amplitude: 3



16. Vertical shift: down 1  
amplitude: 2



17.  $f(x) = 3 \sin x + 7$   
18.  $f(x) = \sin x - 3$   
19.  $f(x) = 5 \sin x + \frac{5}{6}$   
20.  $f(x) = \sin x$