

Honors Precalculus – Sullivan & Sullivan
Chapter 6

*****Be prepared for a Unit Circle quiz any day!**

Section	Activities/Resources	Assignment
6.1		6.1 13-43 eoo
6.1	More angular/linear velocity practice	6.1 73, 76, 78, 86, 88, 89
6.2	Unit Circle	6.2 31-69 odd, 71-80 by 3s
6.2	Unit Circle	6.2 1-28 by 3s, 89-104 by 3s, 108, 110, 111
6.2		6.2 3-30 by 3s, 90-105 by 3s
6.3		1-16 by 3s, 18-30 even, 33-48 by 3s
6.3	Quiz 6.1 & 6.2	49-85 odd, 103-107 odd Review transformations (Section 2.4)
6.4	Transformation Quiz	1-16, 33, 34, 35
6.4	GROUP PRACTICE	17-32, 38
6.5		1-14, 35
6.5	GROUP PRACTICE	15-34, 36
6.6	WORKSHEET "A"	1-26
6.6	Quiz 6.3 to 6.5 WORKSHEET "B"	27-36, 37-49 odd, 71, 73
6.6		51-69 odd, 80
Review		2-26 eoe, 28-40 by 3s, 44-60 even, 73, 76, 77
Review		1, 5, 9, 19, 33, 39, 49, 57, 61, 75, 79
7.1	Chapter 6 Test	1, 7, 13, 19, 25, 31, 37, 43, 49, 55, 61, 67

6.1

76. $\omega = \frac{1}{8} \text{ radian/sec}, v = \frac{1}{4} \text{ m/sec}$ 78. $v = 90\pi \text{ in/sec} \approx 16.06 \text{ mi/hr}$ 86. 2.69 ft/sec

88. $\omega = 480 \text{ rev/min} = 960\pi \text{ radians/min}, v = 12480\pi \text{ in/min} \approx 37.13 \text{ mi/hr}, \omega \approx 1034 \text{ rev/min}$

6.2

4. $\sin t = \frac{2\sqrt{6}}{5}, \cos t = \frac{-1}{5}, \tan t = -2\sqrt{6}, \csc t = \frac{5\sqrt{6}}{12}, \sec t = -5, \cot t = \frac{-\sqrt{6}}{12}$

10. $\sin t = \frac{-1}{10}, \cos t = \frac{-3\sqrt{11}}{10}, \tan t = \frac{\sqrt{11}}{33}, \csc t = -10, \sec t = \frac{-10\sqrt{11}}{33}, \cot t = 3\sqrt{11}$ 16. $\frac{\sqrt{3}}{2}$ 22. $3 + \sqrt{2}$ 28. -1

74. $\frac{\sqrt{3}}{2}$ 80. 1 92. $\sin \theta = \frac{-2\sqrt{5}}{5}, \cos \theta = \frac{-\sqrt{5}}{5}, \tan \theta = 2, \csc \theta = \frac{-\sqrt{5}}{2}, \sec \theta = -\sqrt{5}, \cot \theta = \frac{1}{2}$
 98. $\sin \theta = \frac{-4}{5}, \cos \theta = \frac{-3}{5}, \tan \theta = \frac{4}{3}, \csc \theta = \frac{-5}{4}, \sec \theta = \frac{-5}{3}, \cot \theta = \frac{3}{4}$ 104. -2 108. $R \approx 1988.32 \text{ meters}, H \approx 286.99 \text{ meters}$
 110. $R \approx 1223.36 \text{ feet}, H \approx 364.49 \text{ feet}$

6.4

2. 1 4. The graph of $y = \cos x$ is decreasing for $0 < x < \pi$ 6. The smallest value of $y = \cos x$ is -1. 8. $x = \frac{\pi}{2}, \frac{3\pi}{2}$
 10. $\cos x = 1$ when $x = -2\pi, 0, 2\pi$; $\cos x = -1$ when $x = -\pi, \pi$ 12. A, D, E 14. B 16. A
 Check graphs on TI.

6.5

2. No y-intercept 4. No y-intercept 6. $\csc x = 1$ when $x = \frac{-3\pi}{2}, \frac{\pi}{2}$; $\csc x = -2$ when $x = \frac{-\pi}{2}, \frac{3\pi}{2}$
 8. $x = -2\pi, -\pi, 0, \pi, 2\pi$ 10. $x = -2\pi, -\pi, 0, \pi, 2\pi$ 12. D 14. C Check graphs on TI.

6.6

2. $A = 3, T = 2\pi$ 4. $A = 1, T = 2$ 6. $A = 3, T = \frac{2\pi}{3}$ 8. $A = \frac{4}{3}, T = 3\pi$ 10. $A = \frac{9}{5}, T = \frac{4}{3}$
 12. E 14. I 16. B 18. G 20. D 22. E 24. C 26. F
 Check Graphs on TI. 80. (b) $A = 22.7$, Vertical shift = 57.3, $\omega = \frac{\pi}{6}, \phi = \frac{2\pi}{3}$ (d) $y = 22.6128 \sin(0.5032x + 2.0384) + 57.1686$

Review

2. $\frac{7\pi}{6}$ 6. 120° 10. $\frac{3}{2}$ 14. $\frac{3\sqrt{3}}{2}$ 18. 1 22. 1 26. -1
 28. $\sin \theta = \frac{-4}{5}, \tan \theta = \frac{4}{3}, \sec \theta = \frac{-5}{3}, \csc \theta = \frac{-5}{4}, \cot \theta = \frac{3}{4}$ 34. $\sin \theta = \frac{-4}{5}, \tan \theta = \frac{4}{3}, \sec \theta = \frac{-5}{3}, \csc \theta = \frac{-5}{4}, \cot \theta = \frac{3}{4}$
 40. $\cos \theta = \frac{-\sqrt{15}}{4}, \tan \theta = \frac{\sqrt{15}}{15}, \sec \theta = \frac{-4\sqrt{15}}{15}, \cot \theta = \sqrt{15}$ 56. $y = \sin(2x), A = 1, T = \pi$ 58. $y = -2 \cos(3\pi x), A = 2, T = \frac{2}{3}$
 60. $y = 2 \cos(\frac{1}{3}x), A = 2, T = 6\pi, \text{PhaseShift} = 0$ 76. $r = 16 \text{ in}, \omega \approx 945.38 \text{ rev/min}; r = 14 \text{ in}, \omega \approx 1080.43 \text{ rev/min}$