SM3H Unit 7 test review answers

1. $c_1 \approx 12.1$ cm, $\angle B_1 \approx 59.5°, \angle C_1 = 79.3°$

$c_2 \approx 3.9$ cm, $\angle B_2 \approx 120.5°, \angle C_2 = 18.3°$

2. $a \approx 10.5$ mi, $\angle A \approx 54.8°, \angle C = 49.9°$

3. no triangle

4. Distance from pt A to pt B is 246.6 meters.

5. $c \approx 10.7$ km, $\angle A \approx 42.7°, \angle B = 52.4°$

6. $\angle A \approx 26.7°, \angle B \approx 64.9°, \angle C = 88.4°$

7. Distance between the two towns is 4.6 miles.

8. $\approx$ 10.1 square yards

9. $\approx$ 23.6 square meters

10. $\theta \approx 20.2°$

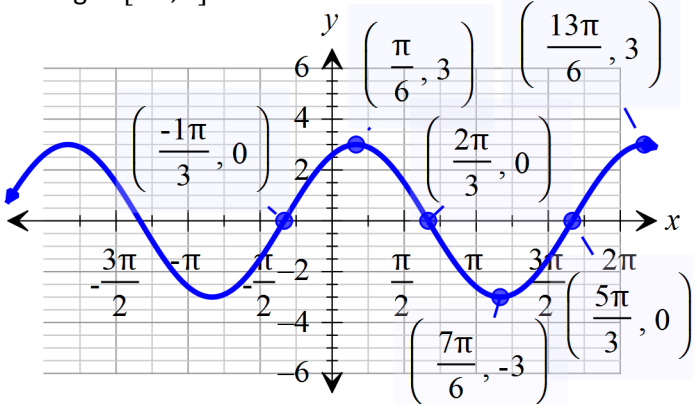
11. $x \approx 71.1$ miles

12. $y \approx 18.4$ feet, $x \approx 24.7$ feet

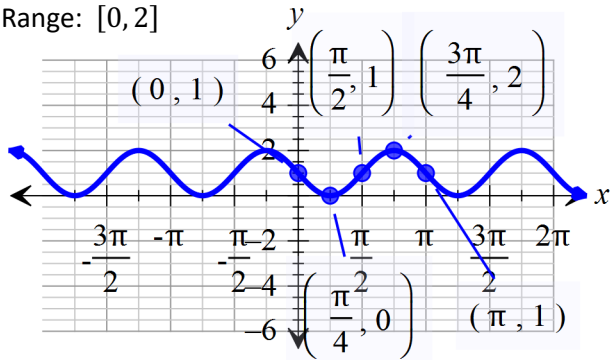
13. $x \approx 17.1$ feet

14. $x \approx 310.2$ miles

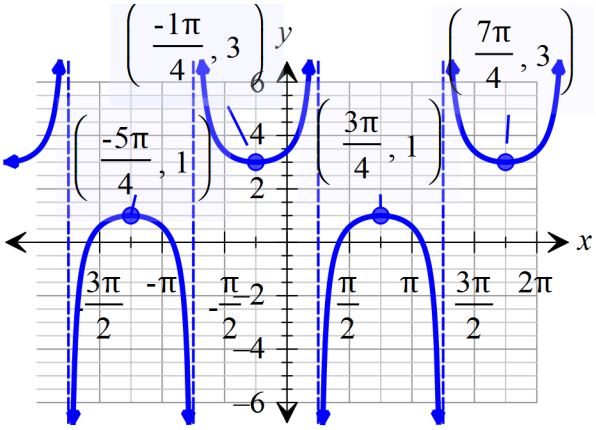
15. Amplitude: 3, Period: 2π
Frequency: $\frac{1}{2\pi}$, Phase shift: right $\frac{\pi}{6}$
Range: $[-3, 3]$



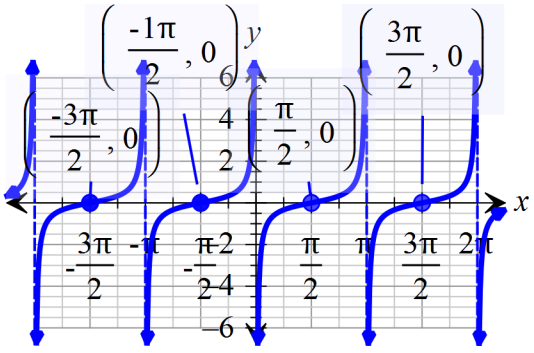
16. Amplitude: 1, Period: π
Frequency: $\frac{1}{\pi}$, Phase shift: none
Range: $[0, 2]$



17. Period: 2π; Asy: $x = \frac{\pi}{4} + \pi k$;
Range: $(-\infty, 1] \cup [3, \infty)$



18. Period: π, Asymptotes: $x = \pi + \pi k \; or \; 0 + \pi k$



19. $y = 3\cot\left(x + \frac{\pi}{4}\right) + 2$

20. $y = -\csc\left(x - \frac{\pi}{6}\right) - 1$

21. $\left(-\frac{\pi}{6}, 3\right)$

22. 6π

23. $y = -11\cos\left(\frac{\pi}{6}x\right)$

24. $h(t) = -260\cos\left(\frac{\pi}{15}t\right) + 290$