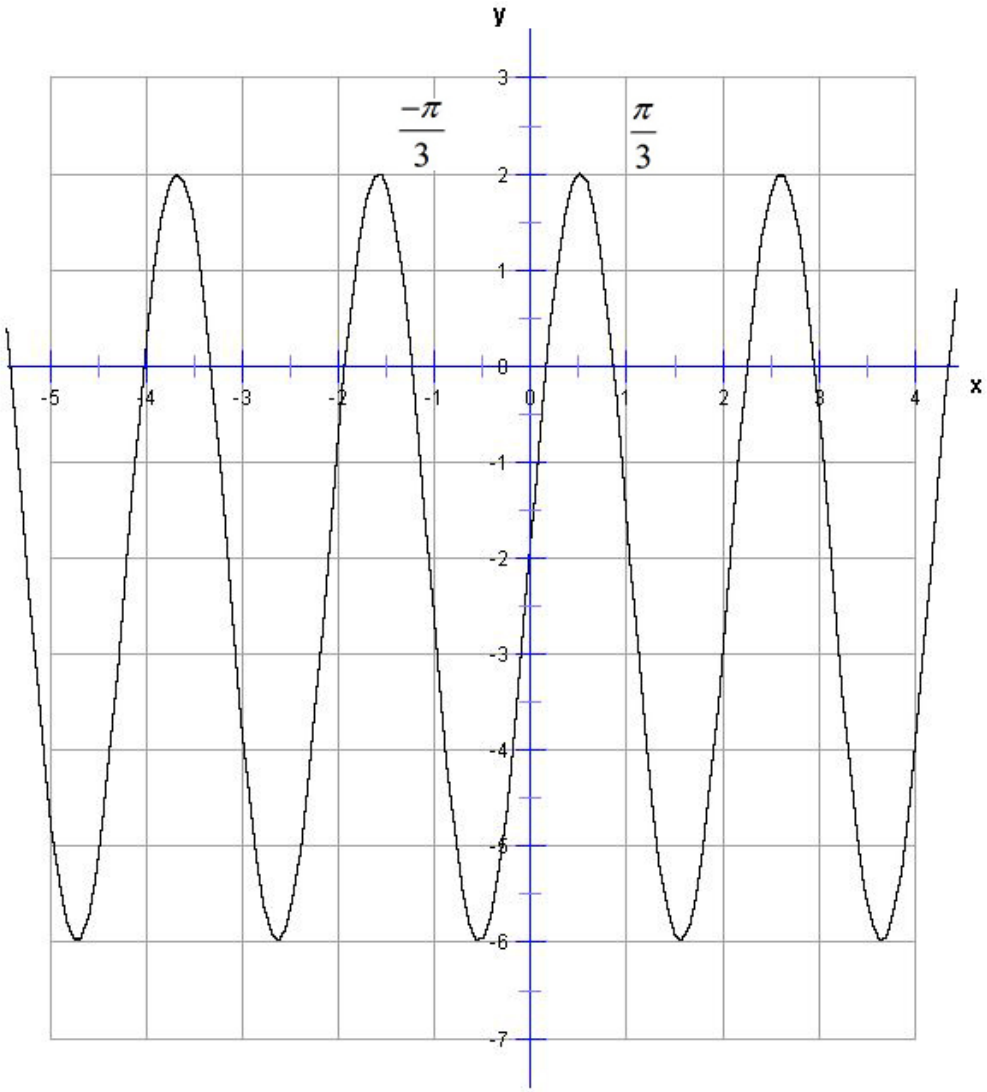
# Pre-Calculus Homework #13 – Answer Key

1) 554.7 miles  438.3 miles

2) Inverted, amplitude = 4, period = $\frac{2\pi}{3}$, phase shift = $\frac{\pi}{3}$ left, vertical shift = 2 down




3) 66,673.4 miles per hour

4) 3.9 miles  4.8 miles

5) Amplitude = 3, period = $6\pi$, phase shift = $\frac{3\pi}{4}$ right, vertical shift = 2 up

$y = 3\cos(\frac{1}{3}x - \frac{\pi}{4}) + 2$

6) left side = 2225.4 feet, right side = 2252.8 feet, area = 18.6 acres
7) angle B = $31^\circ 59' 45.6''$, side c = 565.6, side a = 1376.9, and the area = 206,311.3
8) 254.9 miles
9) angle C = $96^\circ 55' 18.1''$, angle B = $45^\circ 9' 36.4''$, angle A = $37^\circ 55' 5.5''$, and the area = 96.8
10) 292.2 miles
11) angle C = $94.2^\circ$, angle B = $50.2^\circ$, side c = 42.8, and the area = 411.4
    angle C = $14.6^\circ$, angle B = $129.8^\circ$, side c = 10.8, and the area = 104.0
12) cruiser to patrol boat = 716.2 miles, destroyer to patrol boat = 725.1 miles, search area = 245,512.2 square miles
13) angle C = $86.1^\circ$, angle B = $39.0^\circ$, side a = 15.1, and the area = 87.3
14) 192.4 miles
15) No Solutions
16) From Phoebe to camp = 30.8 miles at a bearing of $N60.5^\circ E$
17) No Solutions
18) 1,334.3 miles
19) angle A = $61^\circ 6' 0''$, side b = 250.9, side a = 236.3, and the area = 3756.1
20) distance from tower A = 41.6 miles, distance from tower B = 37.1 miles