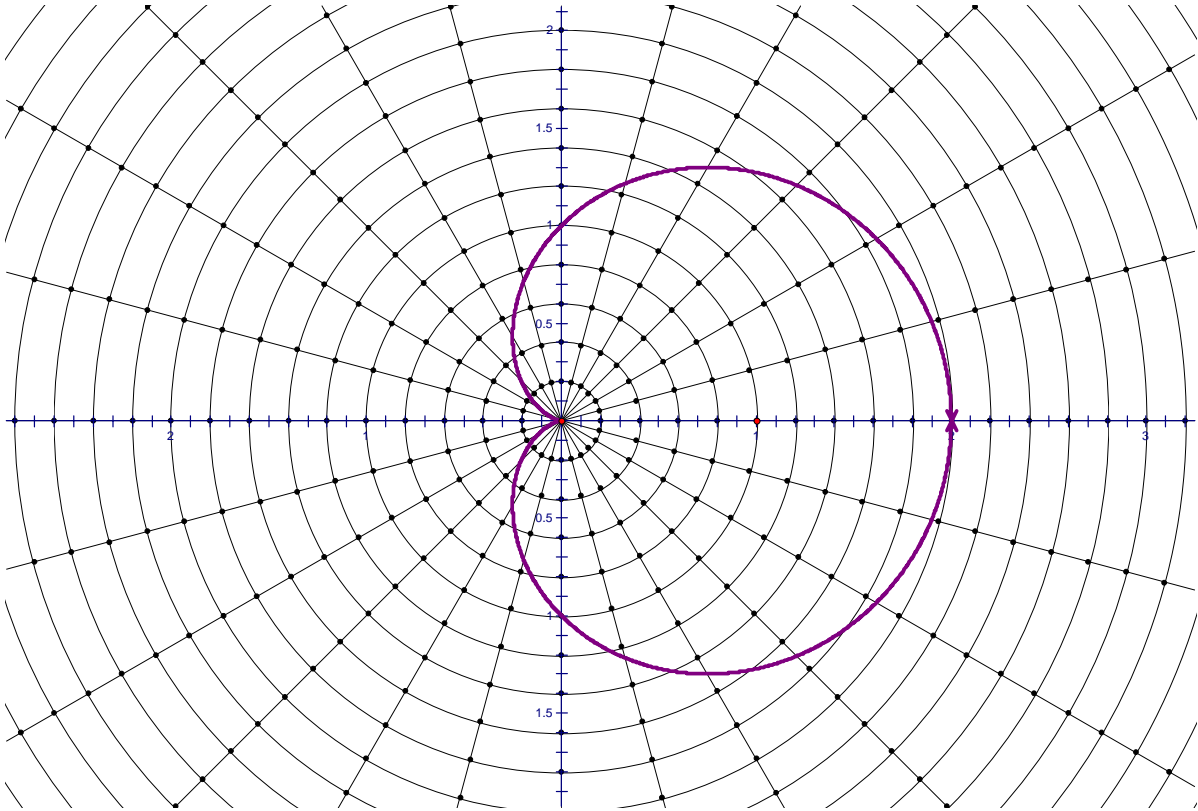
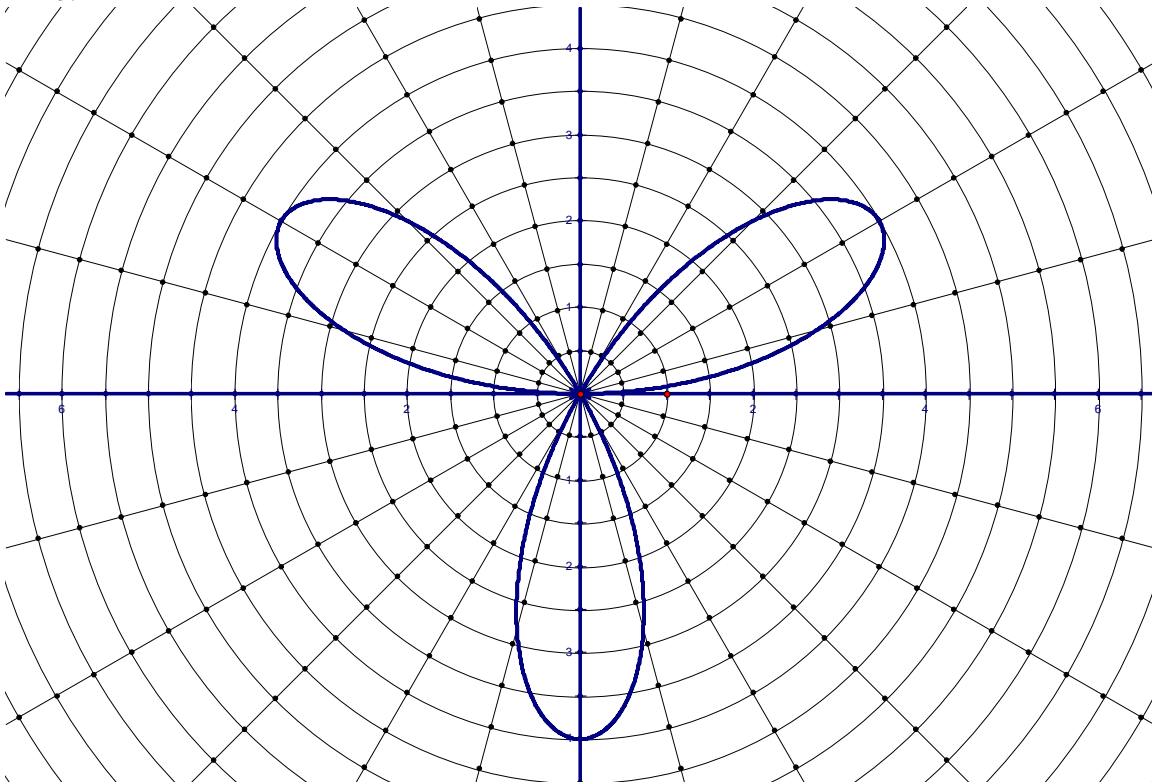


1. a. $A = 19.8^\circ$, $B = 87.3^\circ$, $C = 72.9^\circ$, $\text{Area} = 10,400 \text{ sq. in.}$
 b. $B_1 = 74.6^\circ$, $C_1 = 43.7^\circ$, $c_1 = 61.9 \text{ m}$, $\text{Area}_1 = 2350 \text{ m}^2$
 $B_2 = 105.4^\circ$, $C_2 = 12.9^\circ$, $c_2 = 20.0 \text{ m}$, $\text{Area}_2 = 761 \text{ m}^2$
 c. $c = 6.06 \text{ ft}$, $A = 41^\circ 5'$, $B = 103^\circ 40'$, $\text{Area} = 20.31 \text{ ft}^2$
 d. $C = 54^\circ$, $b = 73.0 \text{ m}$, $c = 135.6 \text{ m}$, $\text{Area} = 4870 \text{ sq meters}$
2. The ship traveled about 17.8 km between the two observations of the lighthouse.
3. The ships are 756 miles apart.
4. a. Magnitude of resultant force = 130.6 lbs b. Magnitude of resultant force = 420 Newtons
5. The angle between the forces is 70.1° .
6. The boat weighs 1,618 lbs.
7. Airspeed = 157 mph, Ground speed = 162 mph
8. Ground speed = 198 mph, Resulting bearing: 187°
9. The hill makes 3.8° with the horizontal.
10. a. $\sqrt{3} - i\sqrt{3}$ b. $-4 - 4i\sqrt{3}$ c. $-12i$ d. $\frac{\sqrt{3}}{2} + \frac{1}{2}i$
11. a. $4 \text{ cis } 120^\circ$ b. $8\sqrt{2} \text{ cis } 45^\circ$ c. $12 \text{ cis } \pi$ d. $6 \text{ cis } 90^\circ$ e. $5 \text{ cis } \frac{3\pi}{2}$
12. a. $\frac{5\sqrt{6}}{2} + \frac{5i\sqrt{2}}{2}$ b. $-12\sqrt{2} - 12i\sqrt{2}$ c. $-3i$ d. $-\frac{1}{8} - \frac{i\sqrt{3}}{8}$ e. $-\frac{1}{8} - \frac{i\sqrt{3}}{8}$
13. a. $\frac{243}{2} - \frac{243i\sqrt{3}}{2}$ b. -4096 c. -1024 d. $-8i$
14. a. $\frac{\sqrt{6} + i\sqrt{2}}{2}$, $\frac{-\sqrt{2} + i\sqrt{6}}{2}$, $\frac{-\sqrt{6} - i\sqrt{2}}{2}$, $\frac{\sqrt{2} - i\sqrt{6}}{2}$ b. $2, 2\text{cis}72^\circ, 2\text{cis}144^\circ, 2\text{cis}216^\circ, 2\text{cis}288^\circ$
 c. $\sqrt{3} + i$, $-1 + i\sqrt{3}$, $-\sqrt{3} - i$, $1 - i\sqrt{3}$
15. a. $r = 4$ b. $r = \frac{5}{3\cos\theta - 2\sin\theta}$ c. $r = 10\csc\theta$
16. a. $x^2 + y^2 - 2x = 0$ b. $x^2 - 6y - 9 = 0$ c. $x = 3$

17. a.



b.



c.

