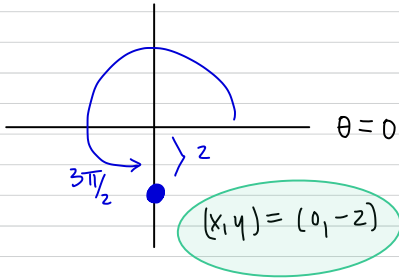
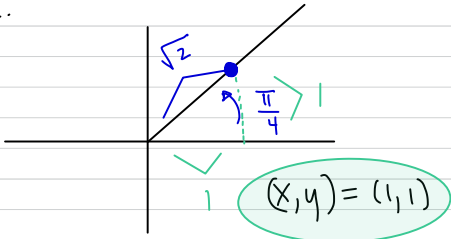


HW #19 Answer Key

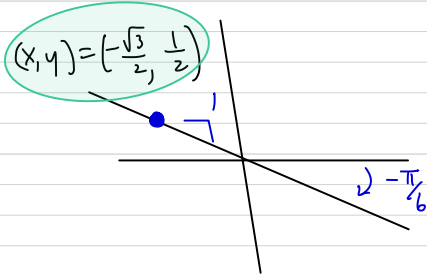
1.



2.

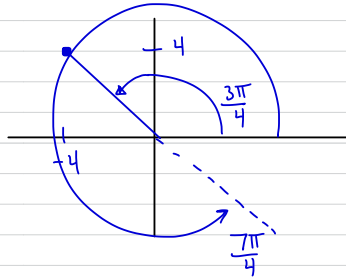


3.



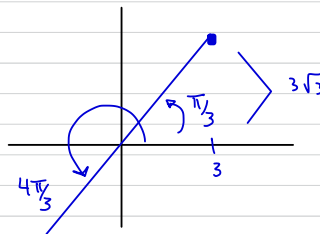
4. $r > 0: (r, \theta) = (4\sqrt{2}, \frac{3\pi}{4})$

$r < 0: (r, \theta) = (-4\sqrt{2}, \frac{7\pi}{4})$



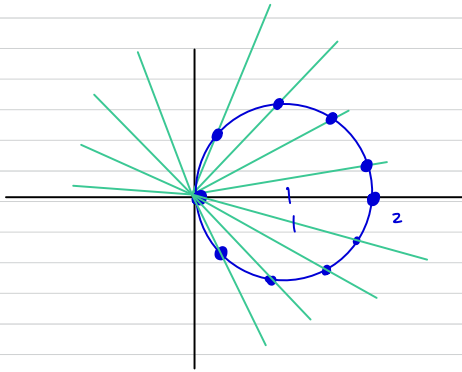
5. $r > 0: (r, \theta) = (6, \frac{\pi}{3})$

$r < 0: (r, \theta) = (-6, \frac{4\pi}{3})$

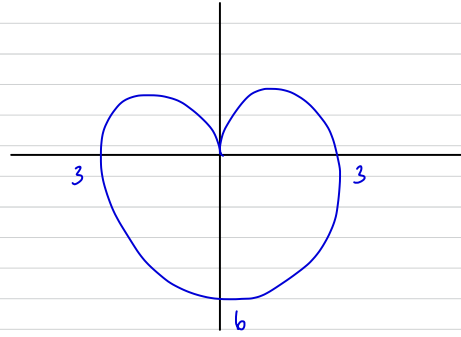


For 6-11, Make sure to show BOTH Cartesian + Polar Plots

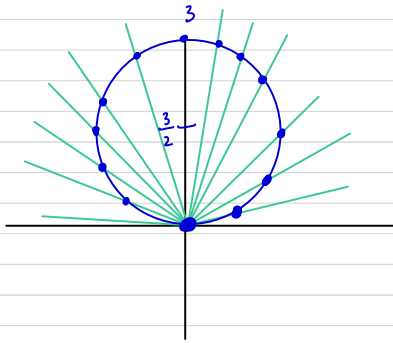
6. Polar Curve



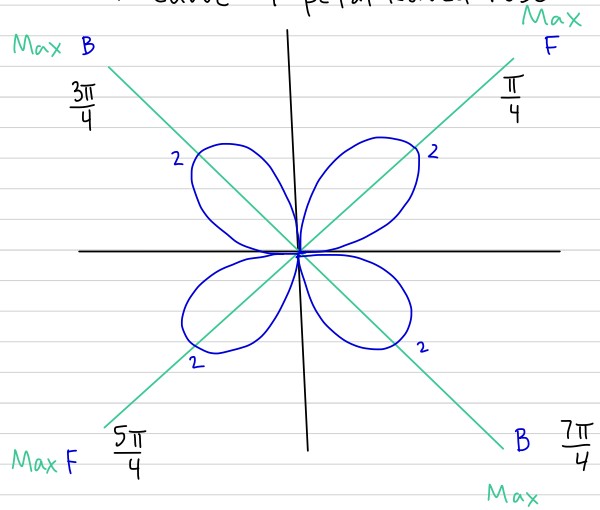
10. Polar Curve 3-6-3 Cardioid



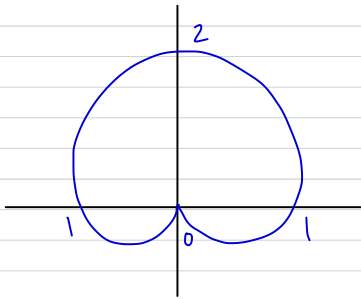
7. Polar Curve



11. Polar Curve 4-petal leaved rose



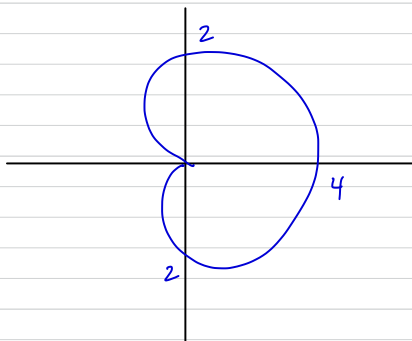
8. Polar Curve 1-2-1 Cardioid



12.
$$-\frac{1}{8} \left(\frac{1}{3} \left(\frac{2}{\sqrt{x^2+4}} \right)^3 - \frac{1}{5} \left(\frac{2}{\sqrt{x^2+4}} \right)^5 \right) + C$$

13.
$$\frac{1}{16} \left[\arctan\left(\frac{x}{2}\right) + \frac{2x}{x^2+4} \right] + C$$

9. Polar Curve: 2-4-2 Cardioid



14.
$$-2\sqrt{e}$$

15.
$$\frac{\pi}{4}$$