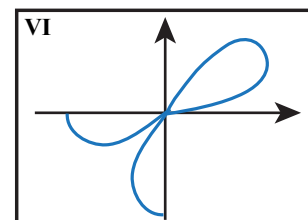
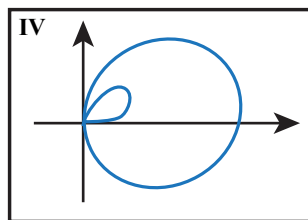
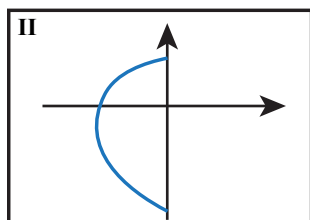
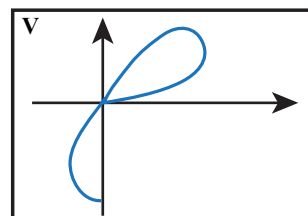
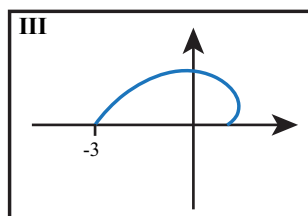
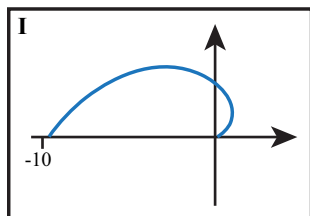


Polar Functions Worksheet - Answer Key



- Translate $x^2 - 2x + y^2 = 6$ into a polar function.
 $r^2 = 2r \cos(\theta) + 6$
- Translate $r^2 \cos(2\theta) = a^2$ into a rectangular equation.
 $x^2 - y^2 = a^2$
- Sketch the function $r = \theta^2$, for $0 \leq \theta \leq \pi$ in frame **I**.
- Sketch the function $r = \theta + \cos(\theta)$, for $\frac{\pi}{2} \leq \theta \leq \frac{3\pi}{2}$ in frame **II**.
- Sketch the function $r = \theta - \sin(\theta)$, for $0 \leq \theta \leq \pi$ in frame **III**.
- Translate $y = x + 2x^2$ into a polar function.
 $r = 0$, $\cos(\theta) = 0$ or $r = \frac{1}{2}(1 - \tan(\theta))$
- Translate $\theta - r \cos(\theta) = 0$ into a rectangular equation.
 $y = x \tan(x)$
- Sketch the function $r = \theta \cos(\theta)$, for $0 \leq \theta \leq \frac{3\pi}{2}$ in frame **IV**.
- Sketch the function $r = \sin(3\theta)$, for $0 \leq \theta \leq \frac{\pi}{2}$ in frame **V**.
- Sketch the function $r = \cos(4\theta)$, for $\pi \leq \theta \leq \frac{3\pi}{2}$ in frame **VI**.

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