Write Polar Equations of Conics

Name in English

If $e = \frac{1}{3}$ and vertices at $(-2\ ,0)$ and $(4\ ,0)$, Find the followings.

1. **Calculate r .**

2. **Identify θ.**
   a) 0
   b) $\frac{\pi}{2}$
   c) π
   d) $\frac{3\pi}{2}$

3. **Identify the type of polar equation.**
   a) $r = \frac{ed}{1 + e\ \cos\theta}$
   b) $r = \frac{ed}{1 - e\ \cos\theta}$
   c) $r = \frac{ed}{1 + e\ \sin\theta}$
   d) $r = \frac{ed}{1 - e \sin\theta}$

4. **Identify directrix.**
   a) $x = 8$
   b) $x = -8$
   c) $y = 8$
   d) $y = -8$

5. **Identify the type of Conic.**
   a) Circle
   b) Parabola
   c) Ellipse
   d) Hyperbola

6. **Identify the answer.**
   a) $r = \frac{8}{3 + \sin\theta}$
   b) $r = \frac{8}{3 - \sin\theta}$
   c) $r = \frac{8}{3 - \cos\theta}$
   d) $r = \frac{8}{3 + \cos\theta}$

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If $e = 2.5$ and vertices at $(0, -3)$ and $(0, -7)$. Find the followings.

1. **Calculate r.**

2. **Identify θ.**
   a) 0
   b) $\frac{\pi}{2}$
   c) π
   d) $\frac{3\pi}{2}$

3. **Identify the type of polar equation.**
   a) $r = \frac{ed}{1 + e\cos\theta}$
   b) $r = \frac{ed}{1 - e\cos\theta}$
   c) $r = \frac{ed}{1 + e\sin\theta}$
   d) $r = \frac{ed}{1 - e\sin\theta}$

4. **Identify directrix.**
   a) $x = -1.8$
   b) $x = 1.8$
   c) $y = -1.8$
   d) $y = 1.8$

5. **Identify the type of Conic.**
   a) Circle
   b) Parabola
   c) Ellipse
   d) Hyperbola

7. **Identify the answer.**
   a) $r = \frac{10.5}{1 + 2.5\sin\theta}$
   b) $r = \frac{10.5}{1 - 2.5\sin\theta}$
   c) $r = \frac{10.5}{1 - 2.5\cos\theta}$
   d) $r = \frac{10.5}{1 + 2.5\cos\theta}$

LIVEWORKSHEETS