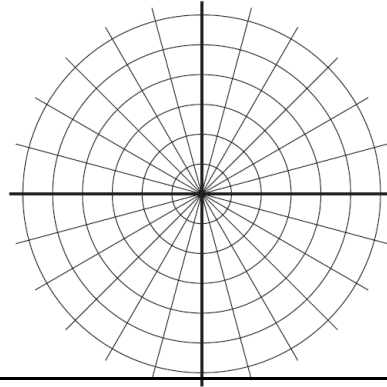


Graph the following polar points:

1. A $\left(1.5, -\frac{7\pi}{6}\right)$
2. B $(-2, -135^\circ)$
3. C $\left(-1, \frac{\pi}{2}\right)$
4. E $(2.5, 240^\circ)$



Find four different pairs of polar coordinates that name the given point if:

$$-360^\circ \leq \sigma \leq 360^\circ \text{ or } -2\pi \leq \sigma \leq 2\pi$$

5. $(2, -150^\circ)$ _____, _____, _____
6. $(5, 240^\circ)$ _____, _____, _____
7. $\left(2, \frac{\pi}{6}\right)$ _____, _____, _____

Rectangular Coordinates to Polar Coordinates:

8. $(8, 10)$
9. $(-9, -4)$

Polar Coordinates to Rectangular Coordinates:

10. $(3, -120^\circ)$
11. $(-2, 135^\circ)$

1. Convert from rectangular equations to polar equations:

12. $y = \sqrt{3}x$
13. $x^2 + (y-3)^2 = 9$
14. $x^2 - y^2 = 1$

Convert from polar equations to rectangular equations. Then, identify the resulting figure.

13. $r = 10$
14. $\theta = -\frac{\pi}{3}$
15. $r = 2\cos\theta$
16. $r = \frac{1}{\cos\theta + \sin\theta}$

Unit 8: Polar Functions Review

Represent complex numbers (polar form) & complex number operations:

17. Explain how you would represent $-3-i$ on the complex plane.

18. Find the conjugate of $-4+2i$.

19. $\frac{6-i}{-4+2i}$

20. $(-1+4i)-(2+7i)$

21. $(2-i)(3+4i)$

Express each complex number in polar form:

22. $-2+5i$

23. $6+2i$

Convert the polar form of a complex number to its rectangular form:

24. $z = 4\left(\cos\frac{\pi}{3} + i\sin\frac{\pi}{3}\right)$

25. $z = 5\left(\cos\frac{3\pi}{4} + i\sin\frac{3\pi}{4}\right)$

Cumulative Review:

26. Solve: $x-2y=7$
 $4x+5y=-2$

27. Find the standard form equation of $2x^2-4y^2-6x+8y-10=2$

28. Evaluate: $\sin\left(\frac{4\pi}{3}\right)$

29. Evaluate: $\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

30. Find $\sec\theta$, if the angle is in Quadrant II, $\sin\theta = \frac{2}{5}$

31. Evaluate $\begin{vmatrix} -5 & 1 \\ -2 & -2 \end{vmatrix}$

32. Find the asymptotes of $y = \tan(2x-60)$

33. Solve: $4\sin^2 x - 3 = 0$

34. Find $m\angle E$, given that $r = 6, b = 2, e = 5$

35. Find the component form of the vector, given $\|5\|, \theta = 48^\circ$

Unit 8: Polar Functions Review

36. An airplane is traveling 300 kilometers per hour due east. A wind is blowing 35 kilometers per hour S 75°W. What is the resulting velocity of the airplane?