SATPREP Name_____

Assignment-Polar Equation

Date_____

Convert each equation from rectangular to polar form.

1) $(x+2)^2+(y-2)^2=8$

2) $y=x^2$

3) $(x-3)^2+(y-1)^2=10$

4) $(x+2)^2+y^2=4$

Convert each equation from polar to rectangular form.

5) $r^2=5\csc(2\theta)$

6) $r=6\cos\left(\theta+\frac{\pi}{6}\right)$

7) $r=4\sec\left(\theta+\frac{\pi}{3}\right)$

8) $r=\csc\theta$

Convert numbers in rectangular form to polar form and numbers in polar form to rectangular form.

9) $-\frac{\sqrt{10}}{2}+\frac{\sqrt{10}}{2}i$

10) $6\left(\cos\frac{11\pi}{6}+i\sin\frac{11\pi}{6}\right)$

Answers to Assignment-Polar Equation

1) $r = -4\cos\theta + 4\sin\theta$

2) $r = \tan\theta\sec\theta$

3) $r = 6\cos\theta + 2\sin\theta$

4) $r = -4\cos\theta$

5) $y = \dfrac{5}{2x}$

6) $\left(x - \dfrac{3\sqrt{3}}{2}\right)^2 + \left(y + \dfrac{3}{2}\right)^2 = 9$

7) $y = \dfrac{x\sqrt{3}}{3} - \dfrac{8\sqrt{3}}{3}$

8) $y = 1$

9) $\sqrt{5}(\cos 135 + i\sin 135)$

10) $3\sqrt{3} - 3i$