Partial Fraction and Polar Coordinates (Review and Review for Senior Final)

Plot the point whose polar coordinates are given. The find three other pairs of polar coordinates of this point.

1. a) $\left(1,\frac{\pi}{2}\right)$ b) $\left(-2,\frac{\pi}{4}\right)$ c) $(3,210^\circ)$

Plot the point whose polar coordinates are given. Then find the Cartesian coordinates of the point.

2. a) $\left(3,\frac{\pi}{2}\right)$ b) $\left(2\sqrt{2},\frac{3\pi}{4}\right)$ c) $(-1,\frac{\pi}{3})$

The Cartesian coordinates of a point are given. Find 4 different polar coordinates for the point.

3. a) $(1,1)$ b) $\left(2\sqrt{3},-2\right)$ c) $(-1,-\sqrt{3})$

Find a rectangular equation for the curve represented by the given polar equation.

4. $r=6\sin\theta$ 5. $r=-3\csc\theta$ 6 $r\tan\theta=4$ 7. $r=5\cos\theta-6\sin\theta$

Find a polar equation for the curve represented by the given Cartesian equation.

8. x = 3 9. $x^2+y^2=9$ 10. $x=-y^2$ 11. $x+y=9$

Find the partial fraction decomposition for each rational function given below.

12. $\frac{4-x}{x^2+6x+8}$ 13. $\frac{4x}{(x+1)^2}$ 14. $\frac{x^3+2x^2-x+1}{x^2+3x-4}$