

$$86. r^3 - 2ar\sin\theta = 0$$

$$r(r-2a\sin\theta) = 0$$

$$r = 2a\sin\theta$$

$$92. (r = 2\cos\theta) \quad r$$

$$r^2 = 2r\cos\theta$$

$$x^2 + y^2 = 2x$$

$$(x^2 - 2x)^{1/2} + y^2 = 0^{+1}$$

$$\frac{r^3 \sin^3\theta}{r^2 \sin^2\theta} = r^2 \frac{\cos^2\theta}{r^2 \sin^2\theta}$$

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

$$r = \cot\theta \csc\theta$$

$$95. \theta = 2\pi/3$$

$$\tan\theta = \tan^2 \frac{\pi}{3}$$

$$\frac{y}{x} = -\sqrt{3}$$

$$y = -\sqrt{3}x$$

$$98. \theta = 5\pi/6$$

$$\tan\theta = \tan \frac{5\pi}{6}$$

$$\frac{y}{x} = \frac{-\sqrt{3}}{3}$$

$$y = \frac{\sqrt{3}}{3}x$$

$$101. r = 4 \csc\theta$$

$$r = \frac{4}{\sin\theta}$$

$$r\sin\theta = 4$$

$$y = 4$$

$$104. r = -\sec\theta = \frac{-1}{\cos\theta}$$

$$\begin{aligned} r\cos\theta &= -1 \\ x &= -1 \end{aligned}$$

$$107. r^2 = \sin 2\theta$$

$$(r^2 = 2\sin\theta \cos\theta) \cdot r^2$$

$$r^4 = 2r\sin\theta \cdot r\cos\theta$$

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

$$110. r = 3\cos 2\theta$$

$$\begin{aligned} r &= 3(2\cos^2\theta - 1) \\ (r &= 6\cos^2\theta - 3)r^2 \end{aligned}$$

$$r^3 = 6r^2 \cos^2\theta - 3r^2$$

$$\begin{aligned} (x^2 + y^2)^{3/2} &= 6x^2 - 3(x^2 + y^2) \\ (x^2 + y^2)^{3/2} &= 3x^2 - 3y^2 \end{aligned}$$

$$113. r = \frac{6}{2 - 3\sin\theta}$$

$$2r - 3r\sin\theta = 6$$

$$2\sqrt{x^2 + y^2} - 3y = 6$$

$$2\sqrt{x^2 + y^2} = 6 + 3y$$

$$4(x^2 + y^2) = 36 + 36y + 9y^2$$

$$4x^2 - 5y^2 - 36y = 36$$

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$$71. x^2 + y^2 = 9$$

$$r^2 = 9$$

$$r = 3$$

$$74. y = -x$$

$$r \sin \theta = -r \cos \theta$$

$$\tan \theta = -1$$

$$\theta = 3\pi/4$$

$$77. r = 1$$

$$r \sin \theta = 1$$

$$r = \frac{1}{\sin \theta}$$

$$r = \csc \theta$$

$$80. 3r \cos \theta + 5r \sin \theta - 2 = 0$$

$$r(3\cos \theta + 5\sin \theta) = 2$$

$$r = \frac{2}{3\cos \theta + 5\sin \theta}$$

$$83. x^2 + y^2 = a^2$$

$$r^2 = a^2$$

$$r = a$$

$$116. r = \frac{5}{\sin\theta - 4\cos\theta}$$

$$r(\sin\theta - 4\cos\theta) = 5$$

$$r\sin\theta - 4r\cos\theta = 5$$

$$y - 4x = 5$$

$$y = 4x + 5$$