

$$9. \quad r = \frac{6}{2+3\cos\theta}$$

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

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

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

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

$$4(x^2+y^2) = (6-3x)^2$$

$$4x^2 + 4y^2 = 36 - 36x + 9x^2$$

$$0 = 9x^2 - 4x^2 - 4y^2 - 36x + 36$$

$$0 = 5x^2 - 36x - 4y^2 + 36$$

$$10. \quad r = \frac{6}{2-\cos\theta}$$

$$r(2-\cos\theta) = 6$$

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

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

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

$$4(x^2+y^2) = (6+x)^2$$

$$4x^2 + 4y^2 = 36 + 12x + x^2$$

$$4x^2 - x^2 + 4y^2 + 12x = 36$$

$$3x^2 + 12x + 4y^2 = 36$$

$$3(x^2+4x) + 4(y^2) = 36$$

$$3(x^2+4x+4-4) + 4(y-0)^2 = 36$$

$$3(x^2+4x+4) + 3(-4) + 4(y-0)^2 = 36$$

$$3(x+2)^2 - 12 + 4(y-0)^2 = 36$$

$$3(x+2)^2 + 4(y-0)^2 = 36+12$$

$$3(x+2)^2 + 4(y-0)^2 = 48$$

$$\frac{3(x+2)^2}{48} + \frac{4(y-0)^2}{48} = 1$$

$$\frac{(x+2)^2}{16} + \frac{(y-0)^2}{12} = 1$$