

## 答案 2.4

1.

$$1) \quad y - x = c(y + x)^3,$$

$$2) \quad 8y - 4x - 3\ln|4x + 8y + 1| = c$$

$$3) \quad x = cye^{-xy},$$

$$4) \quad xy - \ln y + c = 0,$$

$$5) \quad \sin(y - x) = ce^{\frac{-x^2}{2}}$$

$$6) \quad y - \arctan(x + y) = c,$$

$$7) \quad \tan(x - y) + \sec(x - y) = x + c$$

$$8) \quad \frac{\sqrt{3}}{2} \ln \left| \frac{1 + \sqrt{3}(2x + 3y)}{1 - \sqrt{3}(2x + 3y)} \right| = 6x + c$$

2.

$$1) \quad 2u^3v + u^2v^2 = c$$

$$2) \quad \ln(x^2 - y^2 + 1) - \frac{3}{2} \ln(2x^2 - y^2 + 3) + c = 0$$

$$3) \quad \frac{5}{4} \ln(x^2 - y^2 - 1) - \frac{1}{4} \ln(x^2 + y^2 - 3) + c = 0$$

$$4) \quad \frac{y^2}{2x^2} - \frac{x}{y} + \frac{1}{x^2} - \ln x + c = 0$$

$$5) \quad y^3 - \frac{3a}{2x} - \frac{c}{x^3} = 0$$

$$6) \quad \frac{y}{(x^2 + y)^2} = c$$

$$7) \quad \frac{1}{xy} + 2 \ln \frac{y}{x} = c$$

3.

$$1) \quad \frac{\sin y}{x + 1} - e^x = c,$$

$$2) \quad \ln |\cos x \cos y| + \sin x - \frac{1}{3} \sin^3 x = c$$

$$3) \quad 4x - 8\sin y + 3 = ce^{\frac{-4x-8\sin y}{9}}$$

$$4) \quad x \sin(x + y) = c$$

4.

$$1) \quad \frac{xy - 2}{x^3(xy + 1)} = c,$$

$$2) \quad \ln x + c = \frac{2}{2xy - 1}$$

$$3) \quad y = x + \frac{2x}{ce^{2/x} - 1},$$

$$4) \quad \ln x + c + \frac{1}{1 + xy} = 0$$

5)

$$1) \quad u = xy, \quad du/dx = xdy/dx + u/x = xf(u)/x^2 + u/x = (f(u) + u)/x;$$

$$2) \quad u = y/x^2, \quad du/dx = (dy/dx)/x^2 - 2x^{-3} * x^2 u = f(u)/x - 2u/x = (f(u) - 2u)/x;$$