determine whether the equation is exact.
If it is, then solve it.

9. $(2xy + 3)\,dx + (x^2 - 1)\,dy = 0$

11. $(e^x \sin y - 3x^2)\,dx + (e^x \cos y + y^{-2/3}/3)\,dy = 0$

13. $e^t(y - t)\,dt + (1 + e^t)\,dy = 0$

15. $\cos\theta\,dr - (r\sin\theta - e^\theta)\,d\theta = 0$

solve it.

7. $(2xy)\,dx + (y^2 - 3x^2)\,dy = 0$

9. $(x^4 - x + y)\,dx - x\,dy = 0$

11. $(y^2 + 2xy)\,dx - x^2\,dy = 0$

Use the method discussed under "Homogeneous Equations" to solve Problems 9–16.

9. $(xy + y^2)\,dx - x^2\,dy = 0$

Use the method discussed under "Equations of the Form $dy/dx = G(ax + by)$" to solve Problems 17–20.

17. $dy/dx = \sqrt{x + y} - 1$

Use the method discussed under "Bernoulli Equations" to solve Problems 21–28.

21. $\dfrac{dy}{dx} + \dfrac{y}{x} = x^2y^2$