ED de Variables Separables

Resolver las siguientes ecuaciones diferenciales:

1. $\dfrac{dy}{dx} = \tan x + \sec x$

   s d 1

2. $\dfrac{dy}{dx} = \tan y$

   s d 2

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

   s d 3

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

   s d 4

5. $\dfrac{ds}{dt} = \dfrac{(2t+1)(2s-1)}{2(t^2+t)}$

   s d 5

6. $\dfrac{ds}{dt} = \dfrac{(s^3-s)(4t^3-6t)}{(t^4-3t^2)(3s^2-1)}$

   s d 6

7. $\dfrac{du}{dt} = \dfrac{(u+1)(t+1)}{(u+2)(t-1)}$

   s d 7

8. $\dfrac{dt}{du} = \dfrac{tu+u+3t+3}{tu+2u-t-2}$

   s d 8

9. $x^2y' = 1 - x^2 + y^2 - x^2y^2$

   s d 4

10. $xy' - y = 2x^2y$

    s d 6

11. $4tx\dfrac{dx}{dt} = x^2 + 1$

    s d 11

12. $(y \ln x)^{-1}\dfrac{dy}{dx} = \left(\dfrac{x}{y+1}\right)^2$

    s d 12

13. $\dfrac{d\theta}{dt} = (\cos t)(\cos 2\theta - \cos^2\theta)$

    s d 13

14. $\dfrac{dy}{dt} = e^{-2t+3y}$

    s d 14

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

    s d 15

16. $e^x y\,dy - (e^{-y} + e^{2x-y})\,dx = 0$

    s d 16

17. $2tx^2 + 2t + (t^4+1)x' = 0$, con $x(0) = 1$

    s d 18

18. $\dfrac{2r-1}{t}\,dr + \dfrac{r-2r^2}{t^2-1}\,dt = 0$, con $r(2) = 4$

    s d 19

19. $\dfrac{1}{(y-1)^2}\,dx + \dfrac{1}{\sqrt{x^2+4}}\,dy = 0$

    s d 20

20. $\dfrac{dT}{dt} = k(T - T_1)$, con $T(0) = T_0$, donde k, T_0, T_1 son constantes

    s d 3