

Find explicit solutions to the following initial value problems.

1. $\frac{dq}{dr} = 3.2, \quad q(2) = 8.9$

2. $\frac{dh}{ds} = \ln(10), \quad h(0) = 8$

3. $\frac{dq}{dt} = -0.4q, \quad q(0) = 30$

4. $\frac{dw}{dz} = 0.6z, \quad w(0) = 40$

5. $\frac{dv}{dq} = v^2, \quad v(8) = \frac{1}{3}$

6. $\frac{dP}{dt} = \sqrt{P}, \quad P(0) = 10$

7. $\frac{dy}{dt} = 6t^2 + 5, \quad y(0) = 8$

8. $\frac{dw}{dx} = \frac{2x - 5}{3w^2}, \quad w(0) = 2$

9. $\frac{dy}{dt} = \frac{2t}{3y^2}, \quad y(0) = 5$

10. $\frac{dy}{dx} = \frac{10xy}{x^2 + 1}, \quad y(0) = 4$

11. $\frac{ds}{dr} = \frac{1}{\sqrt[3]{s^2}}, \quad s(10) = 2$

12. $\frac{dg}{ds} = \frac{1}{s - 2}, \quad g(5) = 4$

13. $\frac{dr}{dv} = 1/(2re^{r^2}), \quad r(-2) = 0$

$$14. \frac{dq}{dr} = 0.4r, \quad q(0) = 300$$

$$15. \frac{dh}{dr} = 0.1h, \quad h(0) = 400$$

$$16. \frac{dP}{dt} = -0.2P, \quad P(0) = 500$$

$$17. \frac{dw}{dt} = 6e^{2t}, \quad w(0) = 8$$

$$18. \frac{dy}{dx} = e^{-y}, \quad y(0) = 0$$

$$19. \frac{dy}{dx} = e^{-x}, \quad y(0) = 0$$

$$20. \frac{dW}{dx} = 8x^3 + 3x^2, \quad W(1) = 8$$

$$21. \frac{dq}{dt} = \frac{1}{t^2}, \quad q(1) = 3$$

$$22. \frac{dq}{dt} = \frac{1}{q^2}, \quad q(1) = 3$$

$$23. \frac{dy}{dx} = 9x^2y^2, \quad y(0) = \frac{1}{4}$$

$$24. \frac{dy}{dx} = y + 10, \quad y(0) = 50$$

$$25. \frac{dy}{dx} = x + 10, \quad y(0) = 50$$

$$26. \frac{dP}{dt} = rP \left(1 - \frac{P}{k}\right), \quad P(0) = P_0$$