7.4) $y' + P(t)y = g(t)y^n \quad n = 2, 3, \ldots$

$v(t) = y(t)^{1-n}$

$y = v^{\frac{1}{1-n}}$

$y' = \frac{1}{1-n} \cdot v^{\frac{1}{1-n}} \cdot v' = \frac{1}{1-n} \cdot v^{\frac{n}{1-n}} \cdot v'$

$y^n = v^{\frac{n}{1-n}}$

$\frac{1}{1-n} \cdot v^{\frac{n}{1-n}} \cdot v' + P(t) v^{\frac{1}{1-n}} = g(t) v^{\frac{n}{1-n}}$

$\frac{1}{1-n} \cdot v^{\frac{n}{1-n}} \cdot v' + P(t) \cdot v^{\frac{1}{1-n} + \frac{n}{1-n}} = g(t) \cdot v^{\frac{n}{1-n}}$

$\frac{1}{1-n} \cdot v^{\frac{n}{1-n}} \cdot v' + P(t) \cdot v \cdot v^{\frac{n}{1-n}} = g(t) v^{\frac{n}{1-n}}$

$v' + (1-n) P(t) \cdot v = (1-n) g(t)$