



Exponential Function Solving - Decay (Discrete, Mis-matched Time Units)

Equation to Starting Value

1 Solve for the starting cash given this model of a balance of a charitable endowment (monthly disbursements)?

$$223 = P_0 \cdot (1 - 0.07)^{(8 \cdot 12)}$$

A $P_0 = \frac{P}{(1+r)^{t \cdot 12}}$

B $P_0 = \frac{P}{(1-r)^{t \cdot 12}}$

C $P_0 = P \cdot (1-r)^{\frac{t}{12}}$

3 Solve for the starting concentration given this model of a decline of a toxin concentration (weekly dialysis)?

$$14 = C_0 \cdot (1 - 0.06)^{(\frac{49}{7})}$$

A $C_0 = C \cdot (1-r)^{t \cdot 7}$

B $C_0 = \frac{C}{(1+r)^{\frac{t}{7}}}$

C $C_0 = \frac{C}{(1-r)^{\frac{t}{7}}}$

5 Solve for the starting cash given this model of a balance of a charitable endowment (yearly disbursements)?

$$17 = P_0 \cdot (1 - 0.06)^{(\frac{60}{12})}$$

A $P_0 = P \cdot (1-r)^{t \cdot 12}$

B $P_0 = \frac{P}{(1+r)^{\frac{t}{12}}}$

C $P_0 = \frac{P}{(1-r)^{\frac{t}{12}}}$

7 Solve for the starting cash given this model of a balance of a charitable endowment (daily disbursements)?

$$223 = P_0 \cdot (1 - 0.08)^{(7 \cdot 7)}$$

A $P_0 = \frac{P}{(1-r)^{t \cdot 7}}$

B $P_0 = P \cdot (1-r)^{\frac{t}{7}}$

Solve for the starting cash given this model of a balance of a charitable endowment (weekly disbursements)?

$$186 = P_0 \cdot (1 - 0.09)^{(\frac{14}{7})}$$

A $P_0 = \frac{P}{(1-r)^{\frac{t}{7}}}$

B $P_0 = P \cdot (1-r)^{t \cdot 7}$

4 Solve for the starting concentration given this model of a decline of a toxin concentration (weekly dialysis)?

$$54 = C_0 \cdot (1 - 0.06)^{(\frac{21}{7})}$$

A $C_0 = C \cdot (1-r)^{t \cdot 7}$

B $C_0 = \frac{C}{(1+r)^{\frac{t}{7}}}$

C $C_0 = \frac{C}{(1-r)^{\frac{t}{7}}}$

6 Solve for the starting cash given this model of a balance of a charitable endowment (yearly disbursements)?

$$0 = P_0 \cdot (1 - 0.07)^{(\frac{96}{12})}$$

A $P_0 = \frac{P}{(1+r)^{\frac{t}{12}}}$

B $P_0 = P \cdot (1-r)^{t \cdot 12}$

C $P_0 = \frac{P}{(1-r)^{\frac{t}{12}}}$

8 Solve for the starting cash given this model of a balance of a charitable endowment (yearly disbursements)?

$$2 = P_0 \cdot (1 - 0.08)^{(\frac{60}{12})}$$

A $P_0 = P \cdot (1-r)^{t \cdot 12}$

B $P_0 = \frac{P}{(1-r)^{\frac{t}{12}}}$

C $P_0 = \frac{P}{(1+r)^{\frac{t}{12}}}$