SHIPWRECK

(1) $S = \frac{t_1(1-r^n)}{1-r}$

$= \frac{10(1-1.08^7)}{1-1.08}$

$= \frac{10(1-1.08^7)}{-.08}$

$= \frac{10(1-1.71)}{-.08} = \frac{10(-.71)}{-.08} = \frac{7.1}{.08}$

$= 88.75$ gal

(2) $500 = \frac{10(1-1.08^n)}{1-1.08} = \frac{10(1-1.08^n)}{-.08}$

$= 125(1-1.08^n)$

$\frac{500}{-125} = 1-1.08^n$

$-4 = 1-1.08^n$

$5 = 1.08^n$, $1.08^{21} = 5.03$, $n \doteq 21$

$\frac{\log 5}{\log 1.08} = n$

$\frac{.699}{.0334} = 20.9$