In-class question 1: ROC review

Determine the ROC’s associated with the $z$-transforms of the following signals.

(a) $x_a[n] = 10^n u[n + 2]$

(b) $x_b[n] = 10^n (u[n + 2] - u[n - 50000])$

Do the ROC’s include $z = 0$? $z = \infty$?
In-class question 2: partial fraction expansion

Use partial fraction expansion to compute the inverse $z$-transform for $X(z)$ given below:

$$X(z) = \frac{\frac{1}{6}z^{-1}}{1 + \frac{5}{6}z^{-1} + \frac{1}{6}z^{-2}}$$

ROC: $|z| > \frac{1}{2}$. 
In-class question 3: long division

Use long division to compute the inverse $z$-transform of $X(z)$ given below:

$$X(z) = \frac{1 - \frac{1}{8}z^{-3}}{1 - \frac{1}{2}z^{-1}} \quad \text{ROC: } |z| > \frac{1}{2}.$$