Give the equation $|x - 2| + |x - 10| = c$, determine any possible solutions.

   This is really a case by case basis, which can be seen below,

$$\begin{cases} \%c_{13} - 8 > 0 & c = 2\%c_{13} - 8 \\ \%c_{13} > 0 & x = 10 - \%c_{13} \\ -\%c_{14} - 8 > 0 & c = -8 \\ \%c_{14} > 0 & x = \%c_{14} + 10 \\ 8 - \%c_{15} > 0 & c = 8 \\ \%c_{15} > 0 & x = 10 - \%c_{15} \\ \%c_{16} > 0 & c = 2\%c_{16} + 8 \\ \%c_{16} + 8 > 0 & x = \%c_{16} + 10 \end{cases}$$