CSCI 1900 - Homework 5-B

**Section 13.4: Regular Expessions**  *(8 points)*

1. Let $A= \left\{+, ⋅, a, b, c\right\}$ show that the following expressions are regular over *A.*
	1. $c⋅\left(a+b\right)∨(a⋅b)$(1)
	2. $\left(a∨b\right)∨(a+b)^{\*}$ (1)
2. Let $A= \left\{ l, m, p \right\}$.
	1. Give the regular set corresponding to the regular expression $\left(l∨m\right)pl^{\*}$ (1)
	2. Give the regular set corresponding to the regular expression $l(pl)^{\*}(m∨\left(lp\right)^{\*})$ (1)
3. Let $A= \left\{ x, y, z \right\}$.
	1. Does the string *zz* belong to the regular set corresponding to $z^{\*}(xy^{\*}∨ x^{\*}y)$ (1)
	2. Does the string *zxxxxy* belong to the regular set corresponding to $z^{\*}(xy^{\*}∨ x^{\*}y)$ (1)
	3. Does the string *zzxxyy* belong to the regular set corresponding to $z^{\*}(xy^{\*}∨ x^{\*}y)$ (1)
4. Give the regular expression over the alphabet { r, s, t ) for the set of strings that begin and end with an r , and contain at exactly 3 s’s or at least 1 t (1).