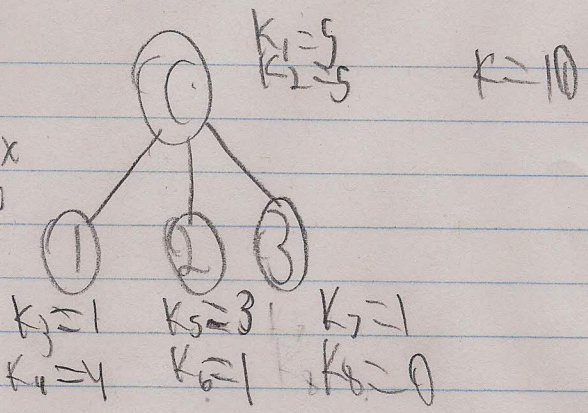
Task 2(



E(X) = Entropy of node X
W(X) = weight of node X

E(0) = 1 (even split)
W(1) = 0.5
$E(1) = -\frac{K_3}{K_3+K_4}\log_2\left(\frac{K_3}{K_3+K_4}\right) - \frac{K_4}{K_3+K_4}\log_2\left(\frac{K_4}{K_3+K_4}\right)$
$= -(0.2)\log_2(0.2) - (0.8)\log_2(0.8)$
$= -(0.2)(-2.32193) - (0.8)(-0.32193)$
$= 0.464386 + 0.257544 = 0.72193$
W(2) = 0.4
$E(2) = -\frac{K_5}{K_5+K_6}\log_2\left(\frac{K_5}{K_5+K_6}\right) - \frac{K_6}{K_5+K_6}\log_2\left(\frac{K_6}{K_5+K_6}\right)$
$= -(0.75)\log_2(0.75) - (0.25)\log_2(0.25)$
$= 0.81128$
W(3) = 0.1
E(3) = 0 (all of one type, ∴ Entropy = 0)