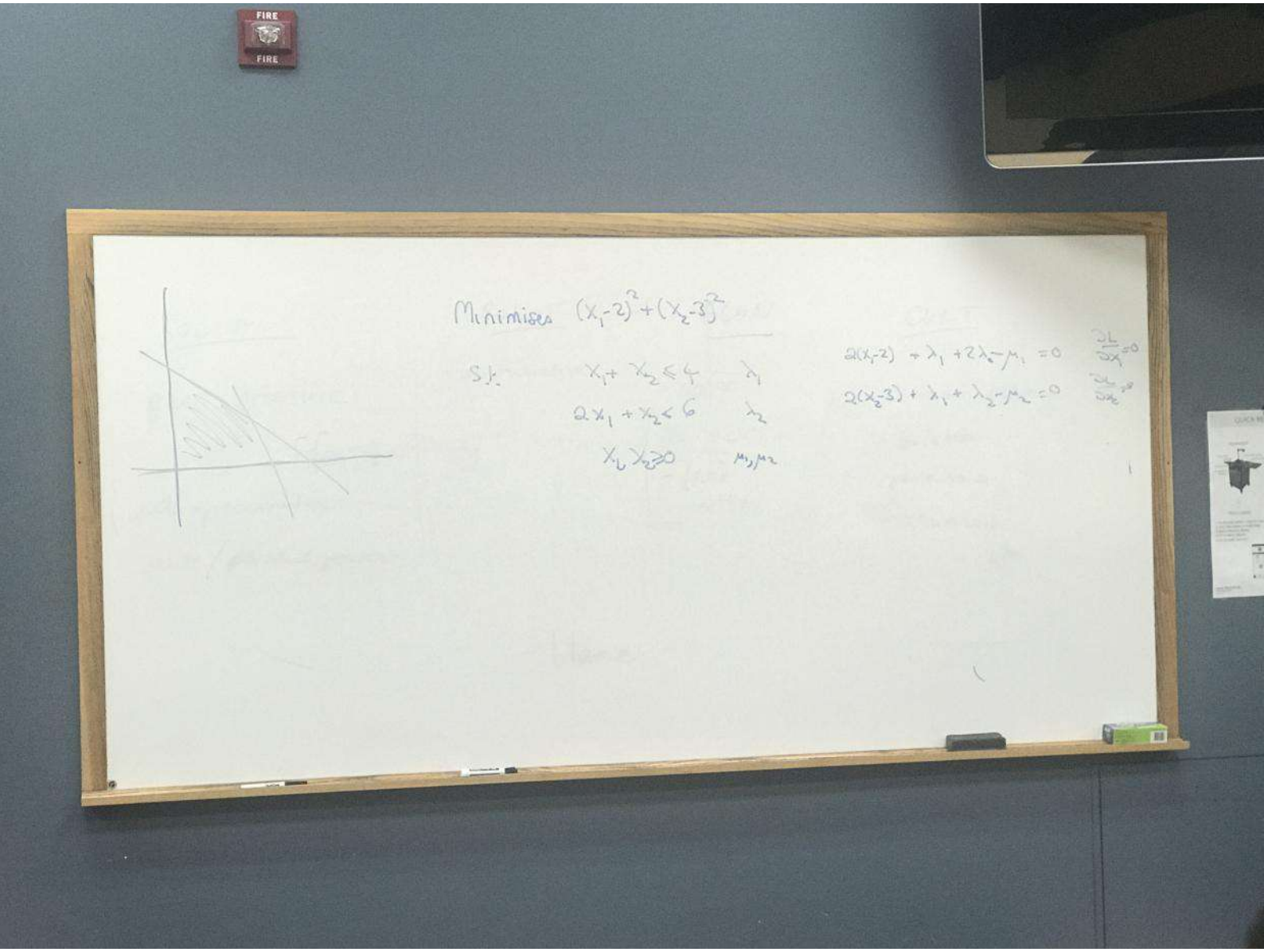
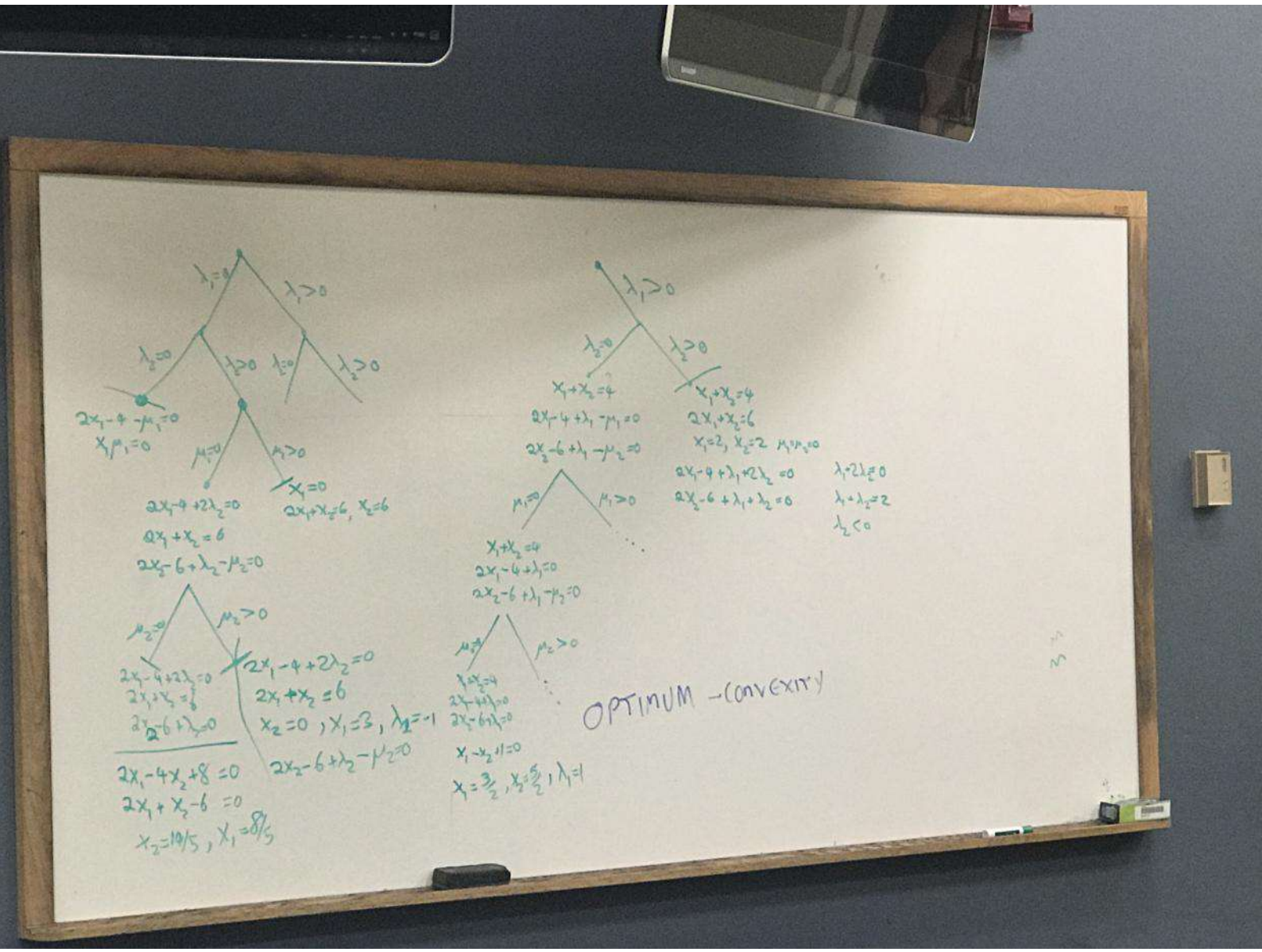

FIRE
FIRE
Minimise $(x_1-2)^2+(x_2-3)^2$
s.t. $x_1+x_2 \leq 4$ λ_1
$2x_1+x_2 \leq 6$ λ_2
$x_1, x_2 \geq 0$ μ_1, μ_2
$2(x_1-2)+\lambda_1+2\lambda_2-\mu_1=0$ $\frac{\partial L}{\partial x_1}=0$
$2(x_2-3)+\lambda_1+\lambda_2-\mu_2=0$ $\frac{\partial L}{\partial x_2}=0$


$\lambda_1=0$
$\lambda_1>0$
$\lambda_2=0$
$\lambda_2>0$
$\lambda_2=0$
$\lambda_2>0$
$2x_1-4-\mu_1=0$
$x_1\mu_1=0$
$\mu_1=0$
$\mu_1>0$
$2x_1-4+2\lambda_2=0$
$2x_1+x_2=6$
$2x_2-6+\lambda_2-\mu_2=0$
$x_1=0$
$2x_1+x_2=6,\ x_2=6$
$\mu_2=0$
$\mu_2>0$
$2x_1-4+2\lambda_2=0$
$2x_1+x_2=6$
$2x_2-6+\lambda_2=0$
$2x_1-4+2\lambda_2=0$
$2x_1+x_2=6$
$x_2=0,\ x_1=3,\ \lambda_2=-1$
$2x_2-6+\lambda_2-\mu_2=0$
$2x_1-4x_2+8=0$
$2x_1+x_2-6=0$
$x_2=10/5,\ x_1=8/5$
$\lambda_1>0$
$\lambda_2=0$
$\lambda_2>0$
$x_1+x_2=4$
$2x_1-4+\lambda_1-\mu_1=0$
$2x_2-6+\lambda_1-\mu_2=0$
$x_1+x_2=4$
$2x_1+x_2=6$
$x_1=2,\ x_2=2$
$\mu_1=\mu_2=0$
$2x_1-4+\lambda_1+2\lambda_2=0$
$2x_2-6+\lambda_1+\lambda_2=0$
$\lambda_1+2\lambda_2\geq 0$
$\lambda_1+\lambda_2=2$
$\lambda_2<0$
$\mu_1=0$
$\mu_1>0$
$x_1+x_2=4$
$2x_1-4+\lambda_1=0$
$2x_2-6+\lambda_1-\mu_2=0$
$\mu_2=0$
$\mu_2>0$
$x_1+x_2=4$
$2x_1-4+\lambda_1=0$
$2x_2-6+\lambda_1=0$
$x_1-x_2+1=0$
$x_1=3/2,\ x_2=5/2,\ \lambda_1=1$
OPTIMUM - convexity