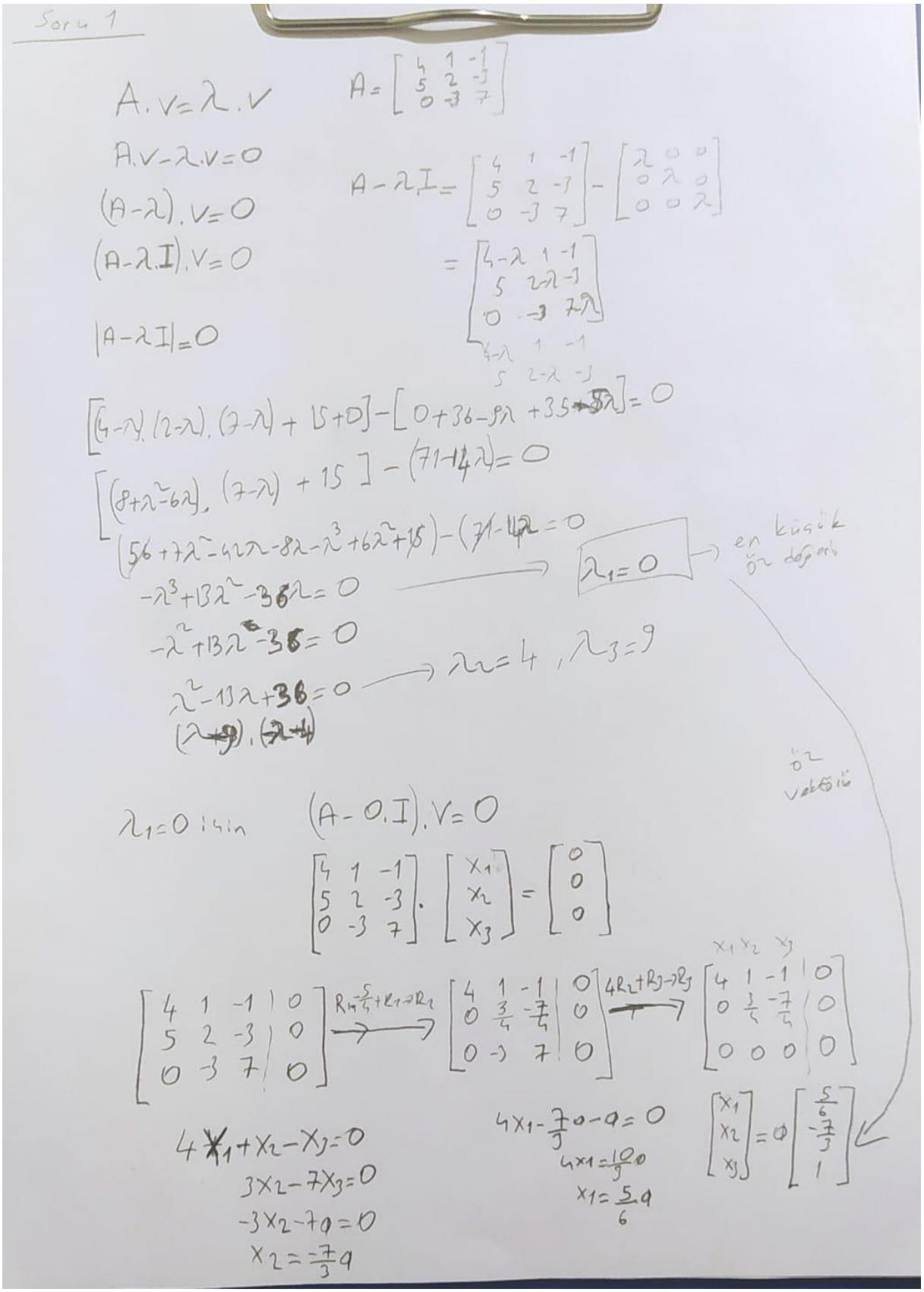
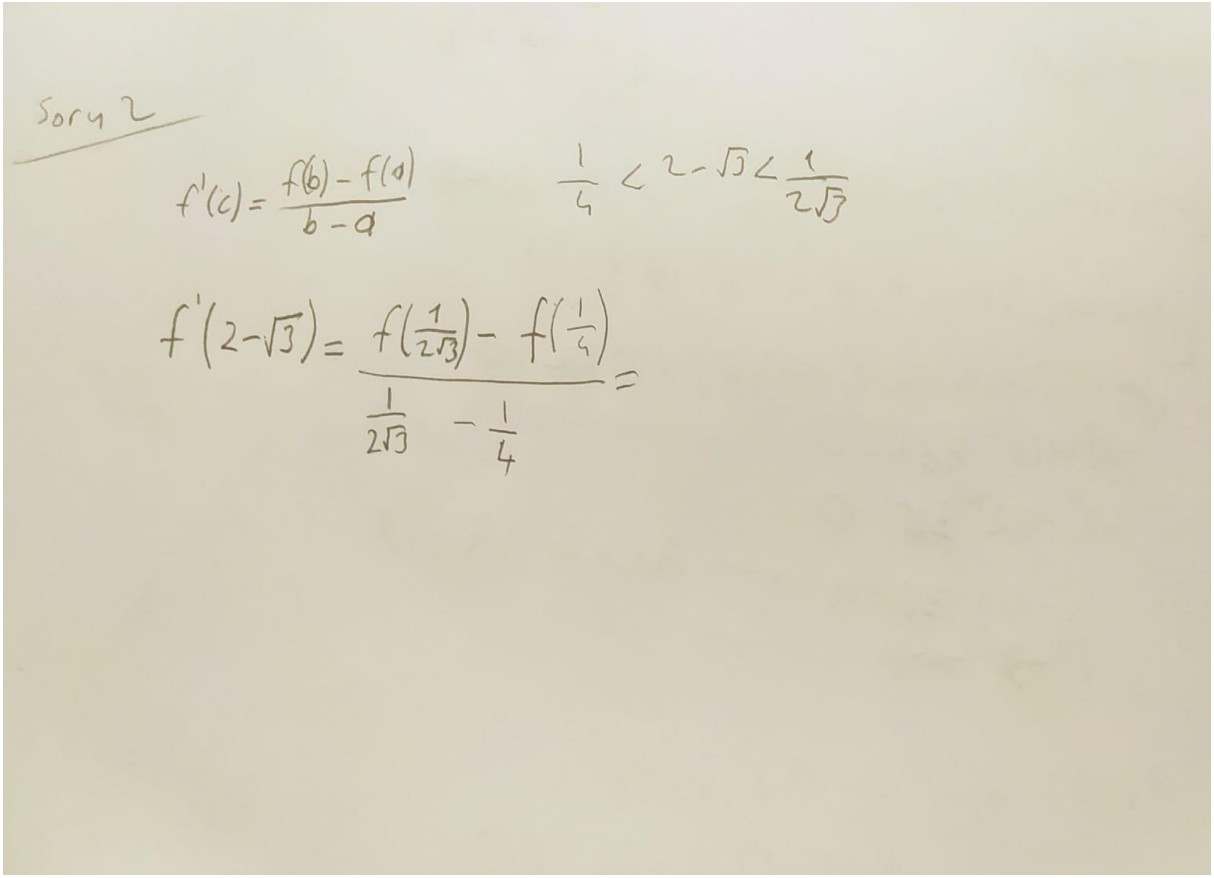
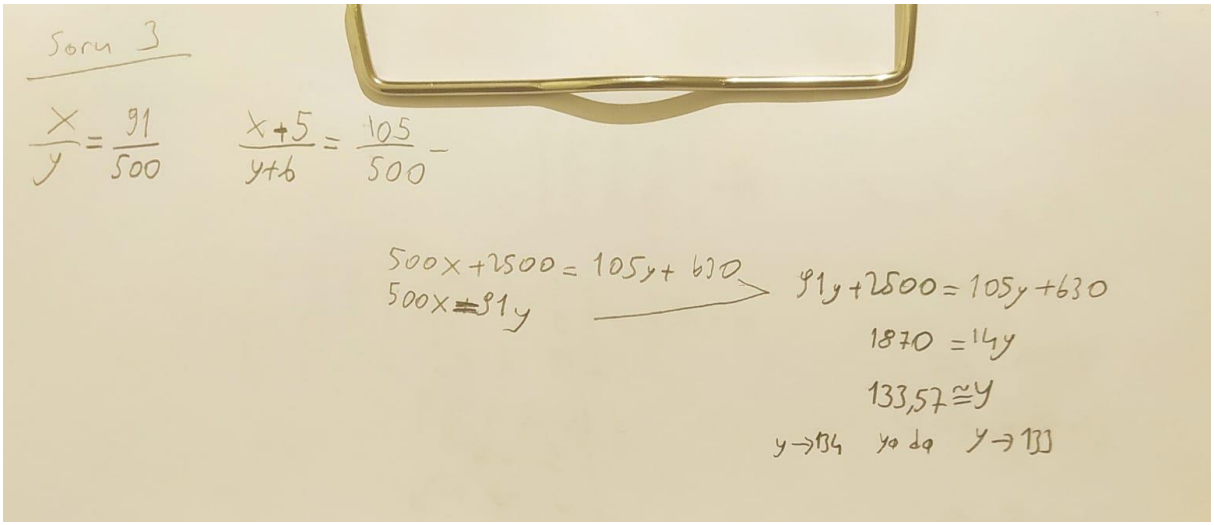
1. soru


Soru 1
A.V=λ.V
A=[4 1 -1; 5 2 -3; 0 -3 7]
A.V-λ.V=0
(A-λ).V=0
(A-λ.I).V=0
|A-λI|=0
A-λI=[4 1 -1; 5 2 -3; 0 -3 7]-[λ 0 0; 0 λ 0; 0 0 λ]
=[4-λ 1 -1; 5 2-λ -3; 0 -3 7-λ]
[(4-λ).(2-λ).(7-λ)+15+0]-[0+36-9λ+35-5λ]=0
[(8+λ²-6λ).(7-λ)+15]-(71-14λ)=0
(56+7λ²-42λ-8λ-λ³+6λ²+15)-(71-14λ)=0
-λ³+13λ²-36λ=0
-λ²+13λ-36=0
λ²-13λ+36=0
(λ-9).(λ-4)
λ₂=4, λ₃=9
λ₁=0
en küçük öz değeri
öz vektörü
λ₁=0 için
(A-0.I).V=0
[4 1 -1; 5 2 -3; 0 -3 7].[x1; x2; x3]=[0; 0; 0]
[4 1 -1 | 0; 5 2 -3 | 0; 0 -3 7 | 0]
R2-5/4+R1→R2
[4 1 -1 | 0; 0 3/4 -7/4 | 0; 0 -3 7 | 0]
4R2+R3→R3
[4 1 -1 | 0; 0 3/4 -7/4 | 0; 0 0 0 | 0]
x1 x2 x3
4x1+x2-x3=0
3x2-7x3=0
-3x2+7a=0
x2=7/3 a
4x1-7/3 a-a=0
4x1=10/3 a
x1=5/6 a
[x1; x2; x3]=a[5/6; -7/3; 1]

2. soru


Soru 2
$f'(c) = \frac{f(b) - f(a)}{b - a}$
$\frac{1}{4} < 2 - \sqrt{3} < \frac{1}{2\sqrt{3}}$
$f'(2-\sqrt{3}) = \frac{f(\frac{1}{2\sqrt{3}}) - f(\frac{1}{4})}{\frac{1}{2\sqrt{3}} - \frac{1}{4}} =$

3. soru


Soru 3
$\frac{x}{y} = \frac{91}{500}$
$\frac{x+5}{y+6} = \frac{105}{500}$
$500x + 2500 = 105y + 630$
$500x = 91y$
$91y + 2500 = 105y + 630$
$1870 = 14y$
$133,57 \cong y$
$y \to 134$ yada $y \to 133$