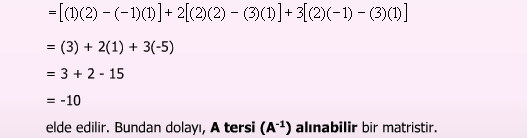
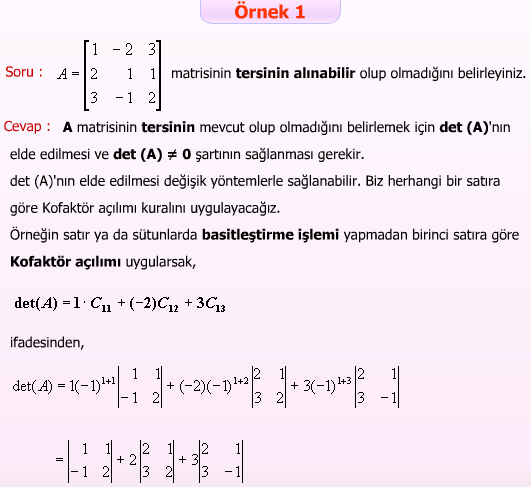
4.BOLUM DOGRUSAL CEBIR VE DIFERANSIYEL DENKLEMLER

**MATRİS VE DETERMİNANTLARA İLİŞKİN DİĞER ÖZELLİKLER**

4.1. DETERMİNANT DEĞERİ YARDIMIYLA MATRİS TERSİNİN MEVCUT OLUP OLMAMASININ BELİRLENMESİ

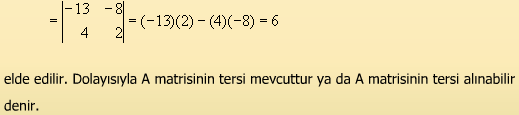
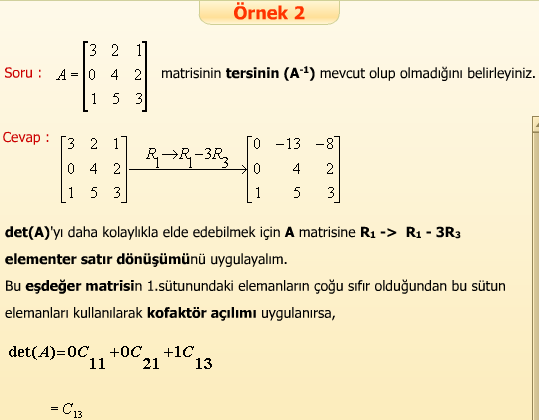


4.1.1. Örnek 1



4.1.2. Örnek 2

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**4.1.3. Cramer Kuralının Tanımlanması**

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| ***n*** eşitlik ve ***n*** bilinmeyenden oluşan bir ***AX=B*** **lineer denklem** **sisteminde** **det (*A*)  0** şartı sağlanıyorsa sistemin *tek bir çözümü mevcuttur* ve bu çözüm  dır. |

Burada ***A***, **lineer denklem sisteminin** ***katsayılar matrisini*** belirtmektedir.

***B*** matrisi ’dır.

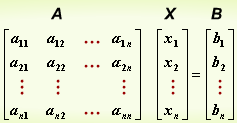
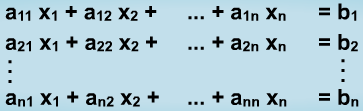


***A*1 matrisi** 1.sütun elemanlarının eşitliğin sağındaki ***B*** **matrisi** ile yer değiştirmesi sonucu elde edilen **katsayılar matrisini**,

***A*2 matrisi** 2.sütun elemanlarının, eşitliğin sağındaki ***B*** **matrisi** ile yer değiştirmesi sonucu elde edilen **katsayılar matrisini**,

***A****n* ise ***n***’inci sütun elemanlarının eşitliğin sağındaki ***B*** **matrisi** ile yer değiştirmesi sonucu elde edilen **katsayılar matrisini** belirtmektedir.

Konuya açıklık kazandırmak için ***AX=B* lineer denklem sistemimizi**



şeklinde yazabiliriz.

eşitlikleri

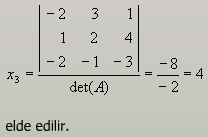
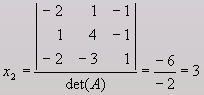
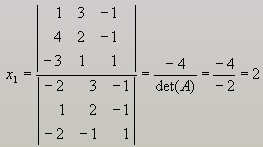
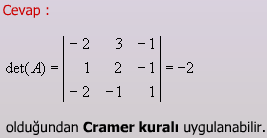
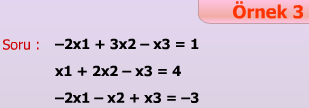


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|  |

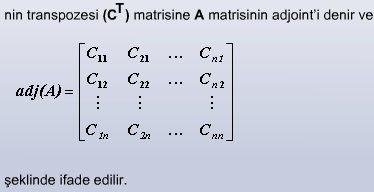
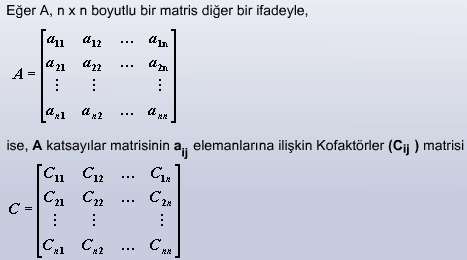
şeklinde ifade edilmektedir.

Görüldüğü gibi ***x*1** için ***A*** **katsayılar matrisinin** 1.sütun elemanları, ***x*2** için 2.sütun elemanları ***B*** **matris** elemanları ile yer değiştirmiştir.

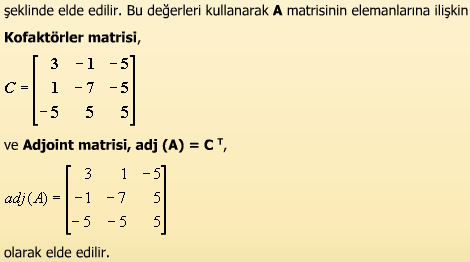
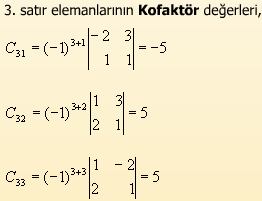
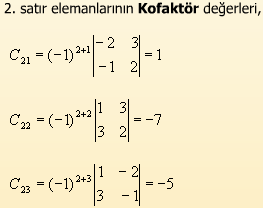
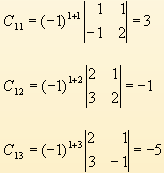
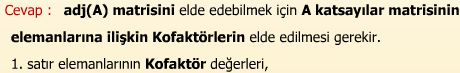
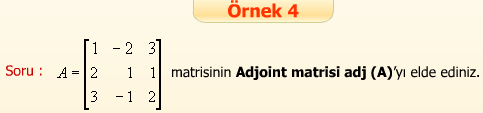
4.1.3.1. Örnek 3



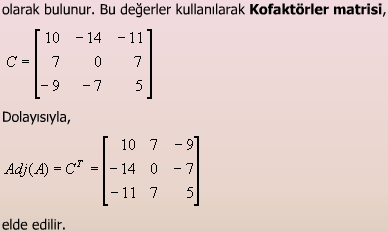
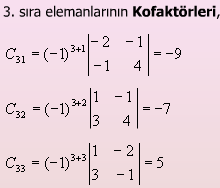
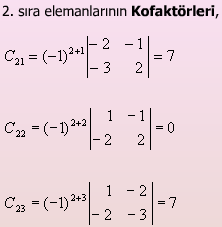
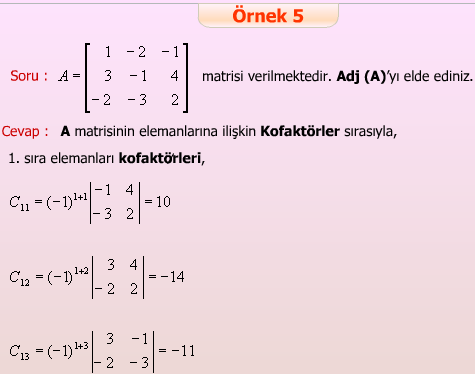
4.2. KARE MATRİSİN ADJOINT MATRİSİ



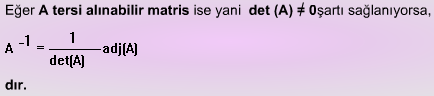
4.2.1. Örnek 4



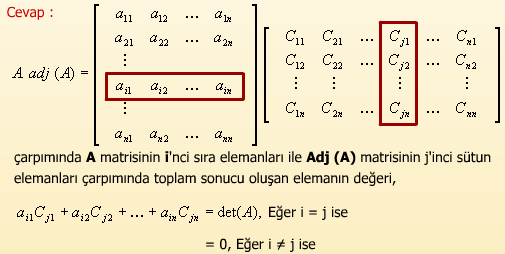
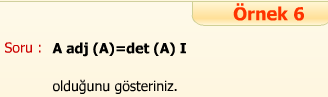
4.2.2. Örnek 5



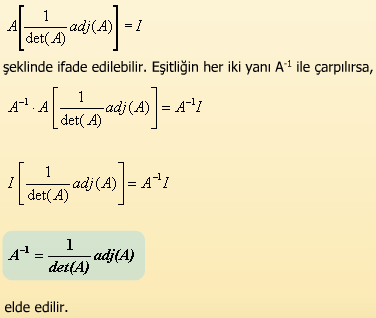
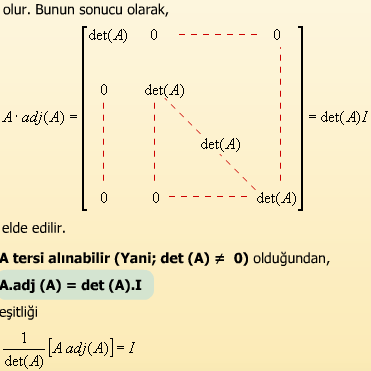
4.2.3. Adj (A) Kullanılarak A-1’in Elde Edilmesi



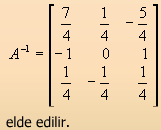
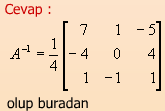
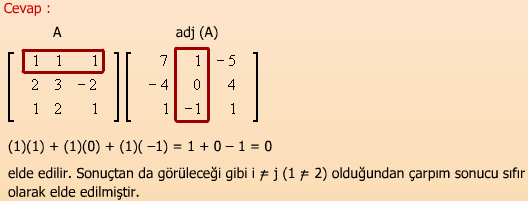
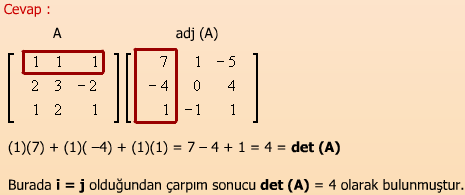
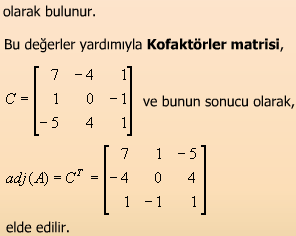
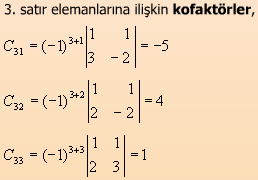
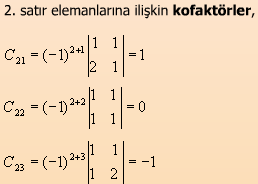
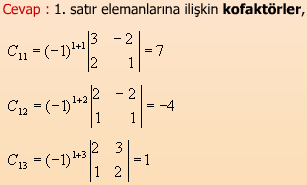
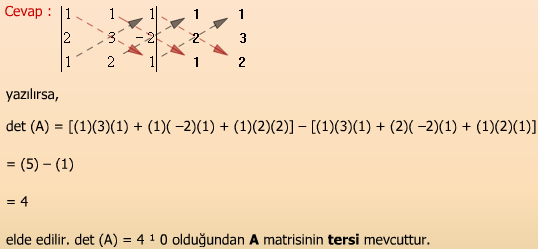
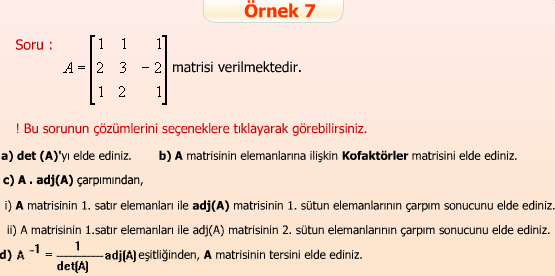
4.2.4. Örnek 6



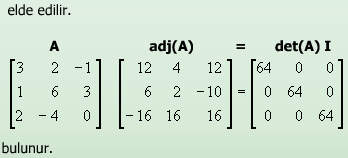
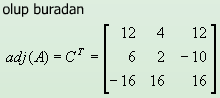
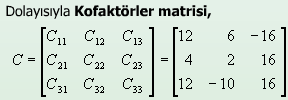
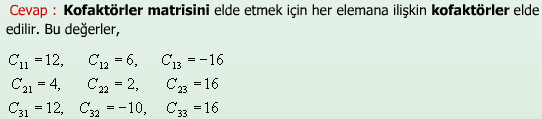
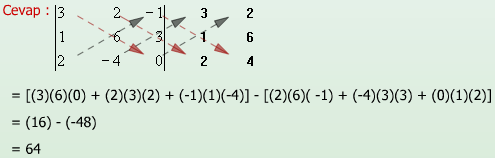
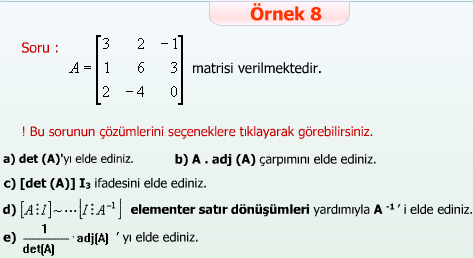
veya



4.2.5. Örnek 7



4.2.6. Örnek 8



**4.BOLUM DEĞERLENDİRME SORULARI**

