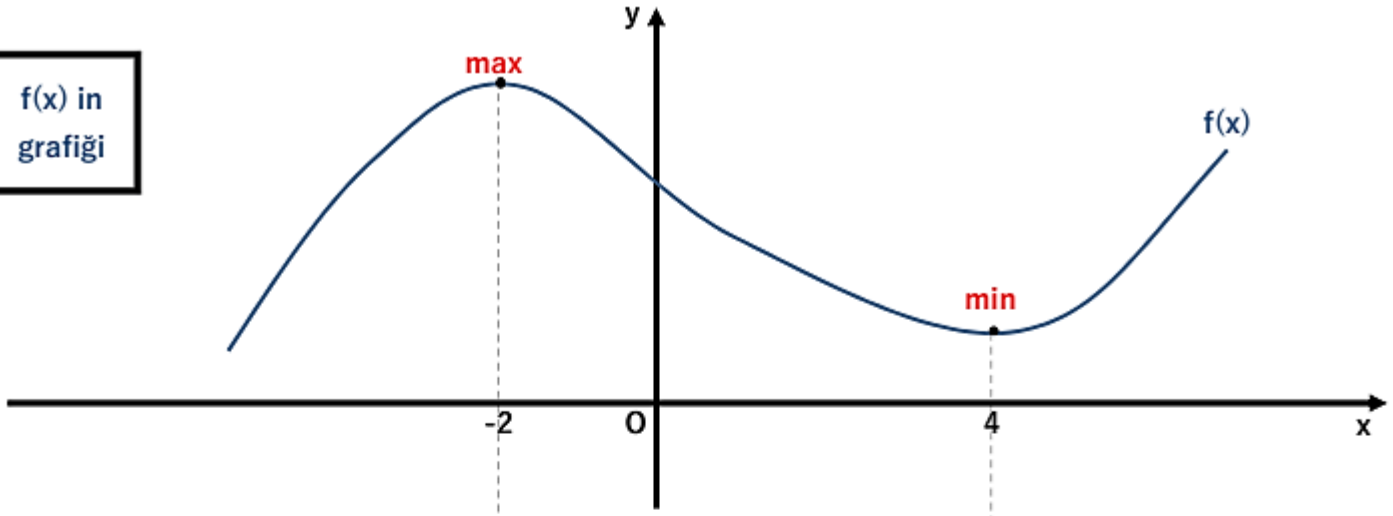
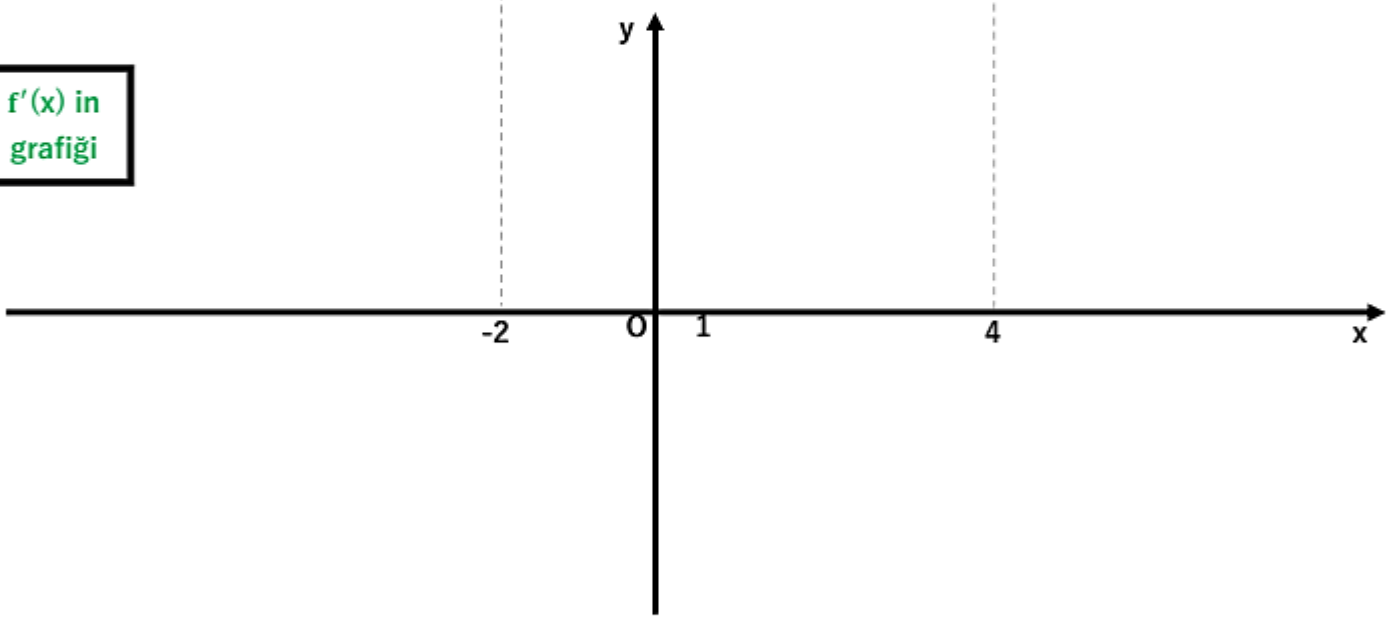
## 4 - Bir Fonksiyonun ve Türevinin Grafikleri Arasındaki İlişki :

f(x) in grafiği




f′(x) in grafiği



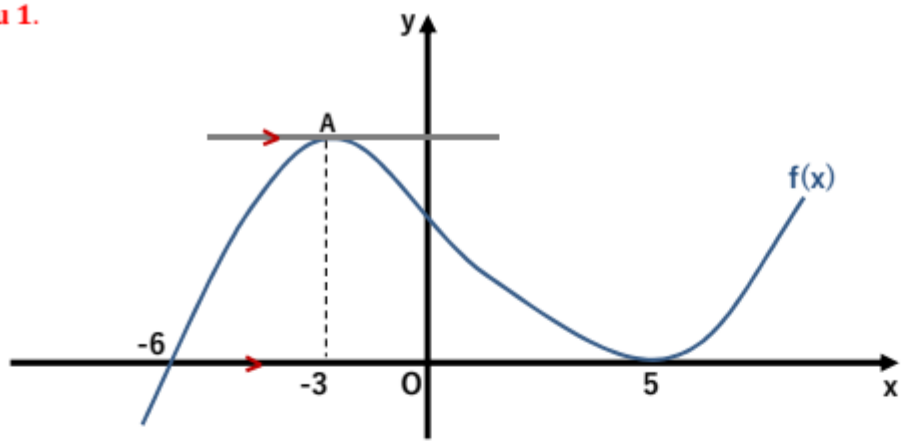

**f′(x) in grafiğini gördüğümüzde neler yapmalıyız.**

**1 – f′(x) in + ve – olduğu yerleri işaretle ⇒ Oralar f(x) in arttığı ve azaldığı yerler.**

**2 – f′(x) in işaret değiştirdiği yerleri işaretle ⇒ Oralar f(x) in extramum noktaları. (max veya min)**

## Sorular :

**Soru 1.**




Yandaki şekilde x=5 de x eksenine teğet olan f(x) fonksiyonunun A noktasındaki teğeti x eksenine paraleldir ve f(x) fonksiyonunun

Buna göre aşağıdakilerden hangileri doğrudur?

I) $f(-8) < 0$

II) $f(2) > 0$

III) $f(5) > 0$

IV) $f(-7) < f(2)$

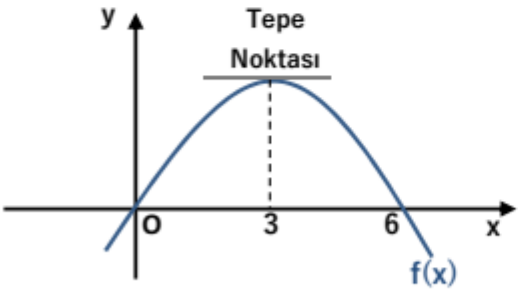
V) $f'(7) > 0$

VI) $f'(-1) > 0$

VII) $f'(-3) = 0$

VIII) $f'(0) < f'(5)$

**Soru 2.**




Yandaki şekilde x=3 de tepe noktası olan f(x) parabolünün grafiğine göre aşağıdakilerden hangileri doğrudur?

I) $f(-2) < 0$

II) $f(4) < f(5)$

III) $f(-1) = f(7)$

IV) $f'(1) < 0$

V) $f'(0) = f'(5)$

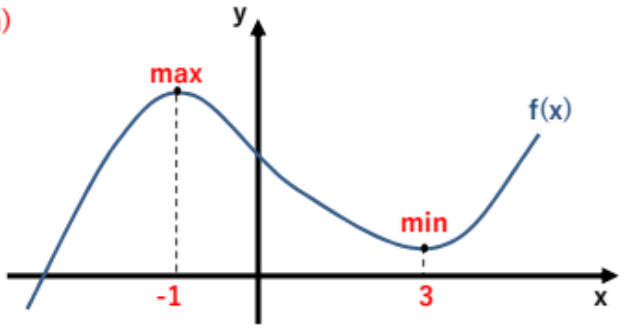
VI) $f'(3) < f'(1)$

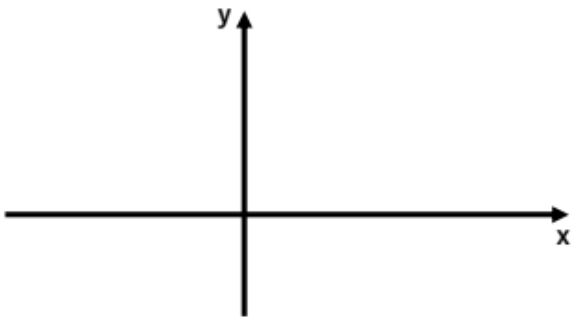


Cevaplar : 1) I, II, IV, V, VII, VIII 8) I, III, VI

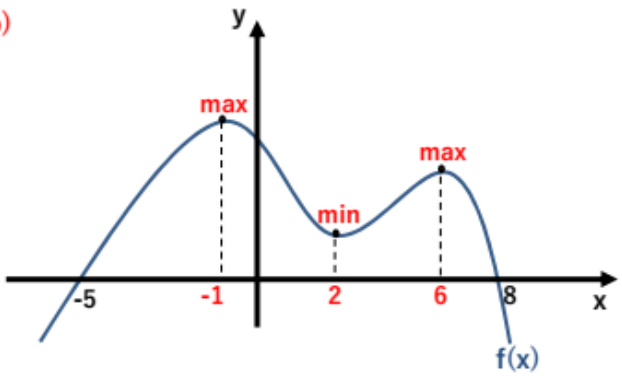
**Soru 3:** Aşağıda garfiği çizilmiş fonksiyonların türevlerinin tahmini grafiklerini yan tarafa çiziniz.

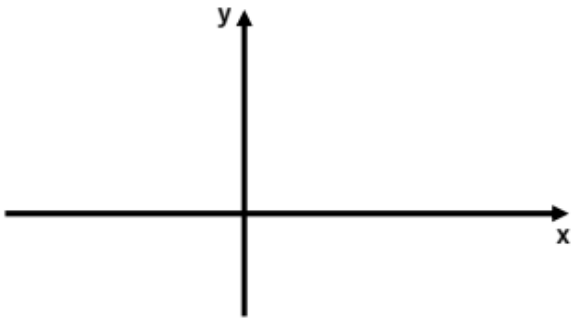
a)



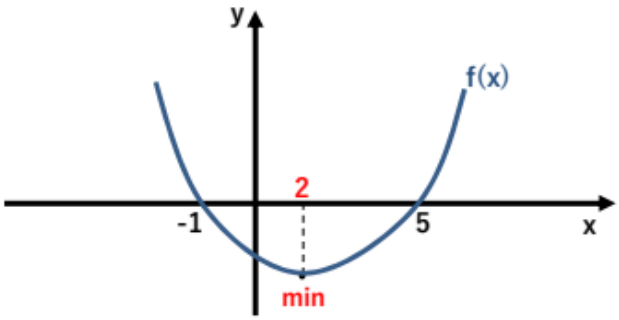



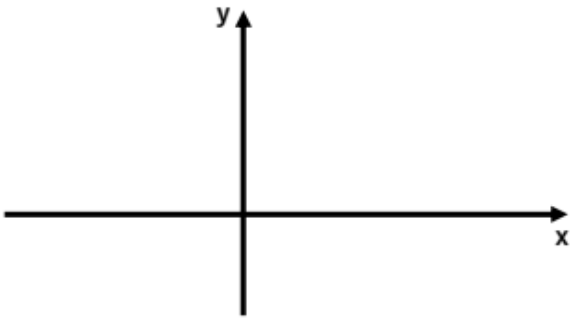

b)



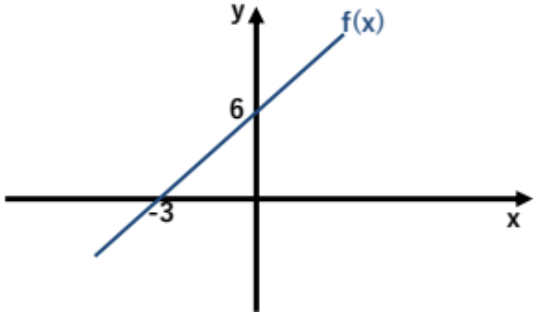



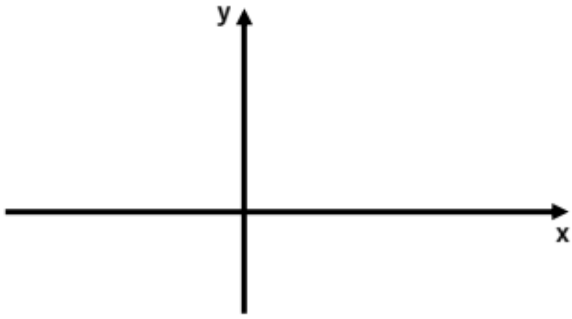

c)



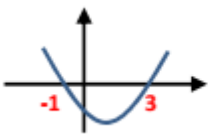

d)



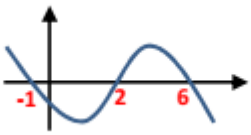





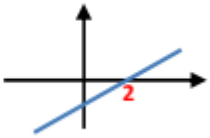

**Cevaplar:** 3 a)




b)



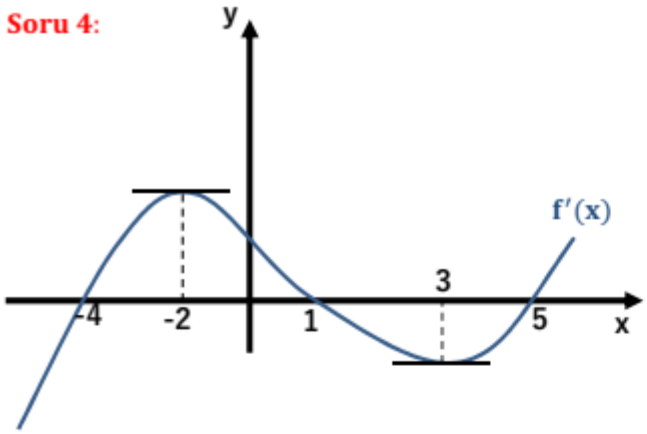

c)




d)



**Soru 4:**




Yanda türevinin grafiği verilen f(x) fonksiyonu için aşağıdakilerden hangileri doğrudur?

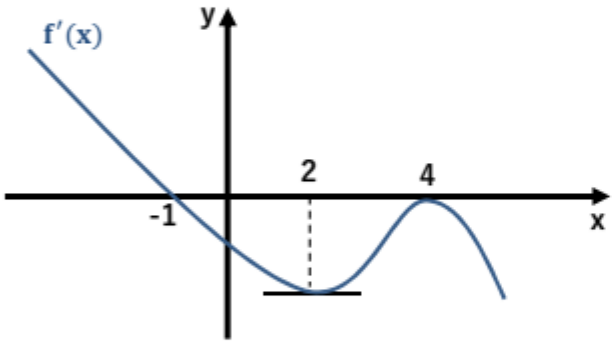
I) $f(x)$ $(-\infty, -4)$ aralığında artandır.

II) $f(x)$ $(-4, 1)$ aralığında artandır.

III) $f(x)$ in $x = -4$ ve $x = 5$ de minimum noktaları vardır.

IV) $f(x)$ in $x = 1$ de maximum noktası vardır?

**Soru 5:**




Yanda türevinin grafiği verilen f(x) fonksiyonu için aşağıdakilerden hangileri doğrudur?

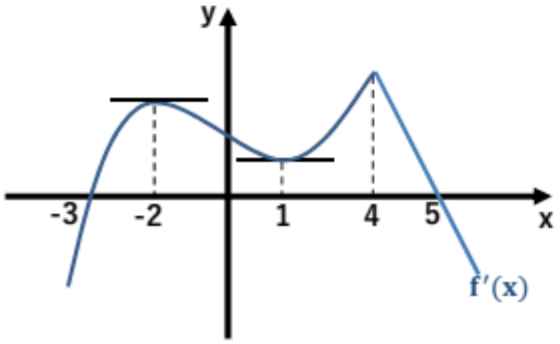
I) $f(x)$ $(-\infty, -1)$ aralığında artandır.

II) $f(-4) < f(-3)$

III) $f(2) < f(3)$

IV) $f(x)$ in $x = -1$ ve $x = 4$ de extramum noktaları vardır.

**Soru 6:**




Yanda türevinin grafiği verilen f(x) fonksiyonu için aşağıdakilerden hangileri doğrudur?

I) $f(x)$ $(-3, 5)$ aralığında artandır.

II) $f(6) > f(7)$

III) $f(x)$ için $x = -2$ ve $x = 1$ extramum noktalarıdır.

IV) $f(x)$ in $x = 5$ de minimumu vardır.



Cevaplar : 4) II, III, IV 5) I, II 6) I, II