**P826: 5，20，36, 40**

1. **Solution：**Since



then let



We can find the solution



Therefore,  is the critical point.

Since , then at 



By the second derivative test,  is a local maximum point, and the corresponding local maximum is 

1. **Solution：**Since



then let



We can find the solution



Therefore,  are the critical points.

Since , then



1. At (0, 0), T(0, 0)=-16<0, then (0, 0, 0) is a saddle point.
2. At (-1, 1),

T(-1, 1)=128>0, 

Therefore,  is a local minimum point, and the corresponding local minimum is .

1. At (1, －1),

T(1, -1)=128>0, 

Therefore,  is a local minimum point, and the corresponding local minimum is .

1. **Solution：**Since



then let



We can find the solution



Therefore, (0.5, 0.5) is the critical point.



1. On the line ,



The local maximum is ,

The local minimum is 

1. On the line ,



The local maximum is ,

The local minimum is 

1. On the line ,



The derivative is , then the extreme point is





At the endpoint (0, 1), ,

1. On the line ,



The local maximum is ,

The local minimum is 

Summary, the absolute maximum is 2 at (0.5, 0.5), the absolute minimum is -32 at (1, 0).

1. Solution: Let



then



Let



We can find



(-6, 4) is the only critical point, and on (-6, 4)



Then . on the boundary *a*=*b, .*

Therefore, when *a*=-6, *b*=4, *f*(*a*,*b*) has its largest value.