解：涉及过程如下：

|  |
| --- |
| *H，**S* |

|  |
| --- |
| C6H6 (1mol，s，*T*=268K，100kPa) |

|  |
| --- |
| C6H6 (1mol，s，*T’*=278K，100kPa) |

|  |
| --- |
| C6H6 (1mol，l，*T’*=278K，100kPa) |

|  |
| --- |
| C6H6 (1mol，l，*T*= 268K，100kPa) |

|  |
| --- |
| *H*2 ，*S*2 |

|  |
| --- |
| *H*3  *S*3 |

|  |
| --- |
| *H*1  *S*1 |

*H*= *H*1+ *H*2+ *H*3= *Cp*,m(l)(*T*’－*T*) +*H*2＋*Cp*,m(s)(*T*－*T*’)

＝9916 J.mol-1+(122.6－126.8)×(268－278) J.mol-1

= 9958 J.mol-1

恒压 *Q*=*H*= 9958 J.mol-1

*U*=*H*－*pV* ≈ *H=*9958 J.mol-1

*S*= *S*1+ *S*2+*S*3= *Cp*,m(l)ln(*T*’/*T*) +*H*2/*T*’+*Cp*,m(s)ln(*T/T*’)

= *H*2/*T*’+[*Cp*,m(s)－*Cp*,m(s)]ln(*T/T*’)

＝9916 J.mol-1/278K+(122.6－126.8)ln(268/278) J.K-1.mol-1

= 35.8 J.K-1.mol-1

*G*≈*A*=*H*－*S* = 9958 J.mol-1－268K×35.8 J.K-1.mol-1 = 363.6 J.mol-1