

Question 1

A dilute gas of Cesium atoms can be confined to a two-dimensional plane surface. They act as a two-dimensional ideal gas in this case.

Which of the following is true regarding the molar specific heat for this gas?

1. $c_V = \frac{1}{2} R$

2. $c_V = R$

3. $c_V = \frac{3}{2} R$

4. $c_V = \frac{5}{2} R$

Question 2

Two moles of Helium gas, initially at temperature 20°C is placed in contact with one mole of Argon gas, initially at 80°C .

Which of the following is true?

1. $E_{\text{Ar } f} = E_{\text{He } f}$

2. $E_{\text{Ar } f} = 2 E_{\text{He } f}$

3. $E_{\text{Ar } f} = \frac{1}{2} E_{\text{He } f}$

4. $E_{\text{Ar } f} = 4 E_{\text{He } f}$

5. $E_{\text{Ar } f} = \frac{1}{4} E_{\text{He } f}$