

## 20-7 The Distribution of Molecular Speeds

20-07

Question 315

1.50-35%

5.00 kg of water is to be cooled from 100 to 0 degrees-C. The quantity of ice needed is: [For water: the specific heat = 4.19 kJ/(kg.K) and the latent heat of fusion = 333 kJ/kg.]

- (a) 0.89 kg.
- (b) 12.5 kg.
- (c) 9.22 kg.
- (d) 4.25 kg.
- (e) 6.29 kg.

20-07

Question 316

1.32-81%

300 grams of water at 25 degree-C are added to 100 grams of ice at zero degree-C. The final temperature of the mixture is:

- (a) 15 degree-C.
- (b) 10 degree-C.
- (c) 20 degree-C.
- (d) zero degree-C.
- (e) 5 degree-C.

## 20-8 The Molar Specific Heats of an Ideal Gas

20-08

Question 317

In a constant volume process, 209 J of heat is added to 1 mole of an ideal monatomic gas initially at 300 K. Find the final temperature of the gas.

- (a) 329 K.
- (b) 350 K.
- (c) 317 K.
- (d) 391 K.
- (e) 373 K.

20-08

Question 318

1.36-30%

Two moles of helium (monoatomic) gas are heated from 100 degrees Celsius to 250 degrees Celsius. How much heat is transferred to the gas if the process is isobaric?

- (a) 3.11 kJ
- (b) 1.51 kJ
- (c) 8.52 kJ
- (d) 2.63 kJ
- (e) 6.23 kJ

20-08

Question 319

1.46-40%

One mole of an ideal diatomic gas ( $C_p = 7R/2$ ) is cooled at constant pressure from 420 K to 300 K. Calculate the change in internal energy of the gas in calories.

- (a) +596 cal
- (b) +285 cal
- (c) +188 cal
- (d) -285 cal
- (e) -596 cal