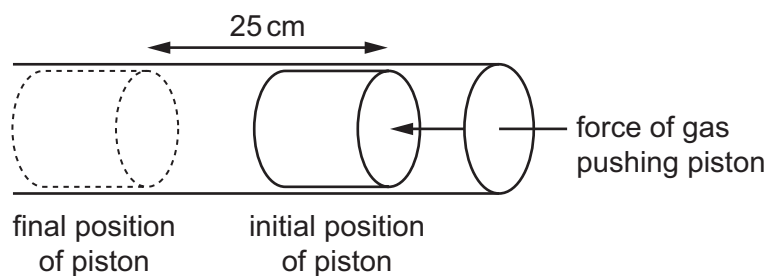


- 17 The gas in an engine does work on a piston of cross-sectional area 80 cm^2 . The pressure on the piston has a constant value of $4.6 \times 10^5\text{ Pa}$.



How much work is done by the gas on the piston when it moves through a distance of 25 cm?

- A $9.2 \times 10^2\text{ J}$ B $9.2 \times 10^4\text{ J}$ C $9.2 \times 10^6\text{ J}$ D $9.2 \times 10^8\text{ J}$
- 18 A loaded aeroplane has a total mass of $1.2 \times 10^5\text{ kg}$ while climbing after take-off. It climbs at an angle of 23° to the horizontal with a speed of 50 ms^{-1} . What is the rate at which it is gaining potential energy at this time?
- A $2.3 \times 10^6\text{ J s}^{-1}$
 B $2.5 \times 10^6\text{ J s}^{-1}$
 C $2.3 \times 10^7\text{ J s}^{-1}$
 D $2.5 \times 10^7\text{ J s}^{-1}$
- 19 When a horizontal force F is applied to a frictionless trolley over a distance s , the kinetic energy of the trolley changes from 4.0 J to 8.0 J .
- If a force of $2F$ is applied to the trolley over a distance of $2s$, what will the original kinetic energy of 4.0 J become?
- A 16 J B 20 J C 32 J D 64 J
- 20 When ice melts, it contracts.

Which row is correct for ice turning into water?

	distance between molecules	density
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases