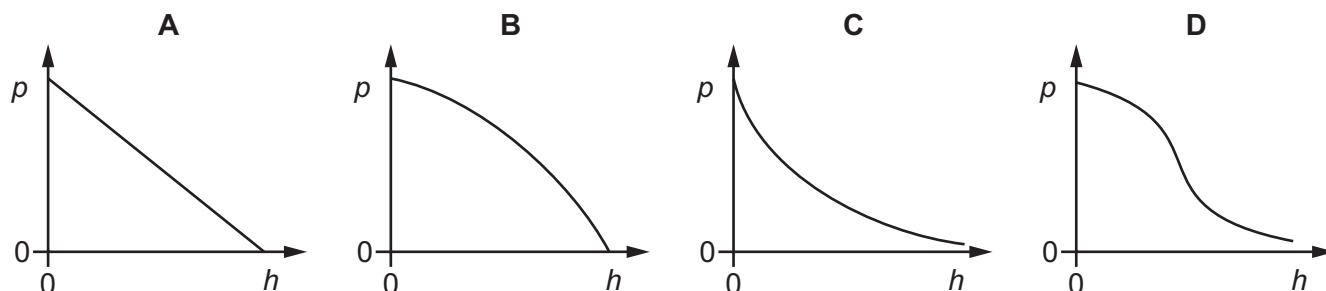


- 14** The density of the air in the atmosphere decreases as the height h above the surface of the Earth increases.

Which graph best shows the variation with height h of the pressure p of the air?



- 15** A bungee jumper on a platform over a river is attached to an elastic rope that is 20 m long when unstretched. He falls towards the river and his lowest point is 30 m below the platform.

The initial gravitational potential energy of the jumper is transferred to other forms during the jump.

Which other forms of energy do the jumper and rope have when the jumper has fallen half-way and when he is at the lowest point of his jump?

| | half-way | lowest point |
|----------|---|---|
| A | kinetic energy and elastic potential energy | kinetic energy and elastic potential energy |
| B | kinetic energy and elastic potential energy | elastic potential energy only |
| C | kinetic energy only | kinetic energy and elastic potential energy |
| D | kinetic energy only | elastic potential energy only |

- 16** A cylinder contains a fixed mass of gas. The gas, at a constant pressure of $1.3 \times 10^5 \text{ Pa}$, expands from a volume of 900 cm^3 to a volume of 1100 cm^3 .

What is the work done by the gas during this expansion?

- A** 26 J **B** 130 J **C** 2600 J **D** 13000 J