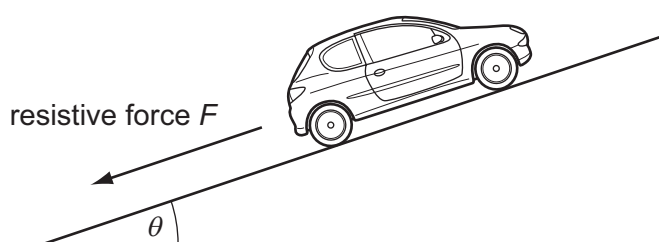


- 14** A cylindrical block of wood has cross-sectional area A and weight W . It is totally immersed in water with its axis vertical. The block experiences pressures p_t and p_b at its top and bottom surfaces respectively.

Which expression is equal to the upthrust on the block?

- A** $(p_b - p_t)A + W$
- B** $(p_b - p_t)$
- C** $(p_b - p_t)A$
- D** $(p_b - p_t)A - W$

- 15** A car of mass m travels at constant speed up a slope at an angle θ to the horizontal, as shown in the diagram. Air resistance and friction provide a resistive force F .



What force is needed to propel the car at this constant speed?

- A** $mg \cos \theta$
- B** $mg \sin \theta$
- C** $mg \cos \theta + F$
- D** $mg \sin \theta + F$

Space for working