

- 30** In 2010, the Japanese launched the world's first interplanetary solar sail spacecraft, called IKAROS. This works because photons reflected from the sail of area  $A$  exerts a forward force on the sail.

A beam of light of intensity  $I$  and frequency  $f$  is reflected at right angles to a solar sail.

What is the force exerted on the sail?

**A**  $\frac{IA}{hf}$

**B**  $\frac{2hf}{c}$

**C**  $\frac{I}{c}$

**D**  $\frac{2IA}{c}$

**End of paper**