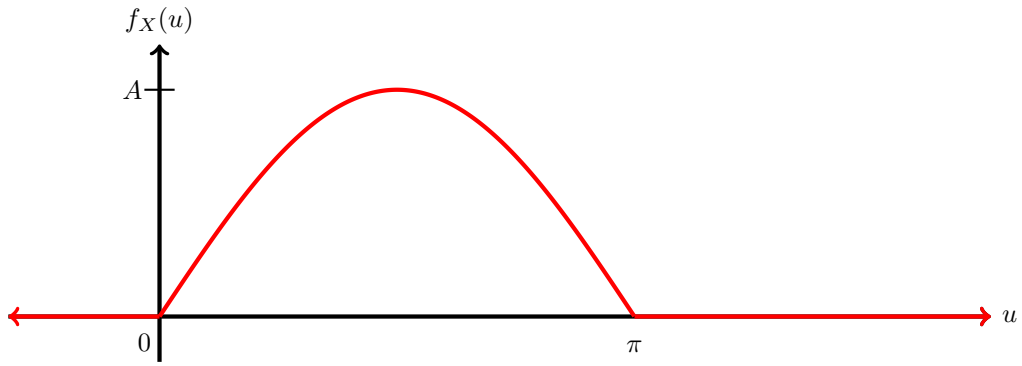
The probability density function (pdf) of a random variable X is the first half of one period of a sine wave, as plotted in the figure below.



What is the probability that X is between $-\pi/3$ and $\pi/3$?

(a) $1/4$

(b) $1/2$

(c) 1

(d) 0

(e) $1/8$

(f) $\sqrt{2}/2$

(g) $3/\pi$

(h) $1/\pi$

(i) $\frac{\sqrt{3}}{2}$

(j) $1 - \frac{\sqrt{3}}{2}$

(k) $\frac{1}{2} - \frac{\sqrt{3}}{4}$

(l) $2/3$

(m) None of these.