

Question #272

Key: C

$$\pi(q | 2) = 6q^2(1-q)^2 \propto q^3(1-q)^3$$

The mode can be determined by setting the derivative equal to zero.

$$\pi'(q | 2) \propto 3q^2(1-q)^3 - 3q^3(1-q)^2 = 0$$

$$(1-q) - q = 0$$

$$q = 0.5.$$