

- 6 The probability distribution for the discrete random variable  $X$  is shown below.

$x$	0	1	2	3
$P(X = x)$	$3p^2$	$0.5p^2 + 2p$	$1.5p$	$1.5p^2 + 0.5p$

- (a) Determine the value of  $p$ . [4]
- (b) Determine the modal value of  $X$ . [2]