

**110.**

You are the producer of a television quiz show that gives cash prizes. The number of prizes,  $N$ , and prize amounts,  $X$ , have the following distributions:

$n$	$\Pr(N = n)$	$x$	$\Pr(X = x)$
1	0.8	0	0.2
2	0.2	100	0.7
		1000	0.1

Your budget for prizes equals the expected prizes plus the standard deviation of prizes.

Calculate your budget.

(A) 306

(B) 316

(C) 416

(D) 510

(E) 518