Key $P = (nCx)(p^x)(1-p)^{n-x}$

Math 150 Quiz 9

$n=10$ $p=1/5$

1. A multiple choice test has ten questions. Each question has five answer choices. If a student guesses on all ten questions, what is the probability the student will guess correctly:

(a) exactly 4 times? $x=4$

(b) at least 9 times?

$x=9$ or $x=10$

(a) $P(x=4) = (10C4)(1/5)^4(4/5)^6 = .0881$

(b) $P(x \geq 9) = P(x=9) + P(x=10)$

$= \left[(10C9)(1/5)^9(4/5)^1\right] + \left[(10C10)(1/5)^{10}(4/5)^0\right]$

$= .000004 + .0000001$

$\approx .0000042$