

1. If x is a binomial random variable with $n = 20$ and $p = .4$, find the following:
 - a) the expected value and variance of x
 - b) $P(x \leq 14)$
 - c) $P(x < 10)$
 - d) $P(x > 6)$
 - e) $P(x \geq 12)$
 - f) $P(9 < x < 14)$
 - g) $P(5 \leq x \leq 11)$
 - h) $P(7 \leq x < 15)$
 - i) $P(x = 9)$

 2. If x is a binomial random variable with $n = 12$ and $p = .8$, find the following:
 - a) $P(x \geq 10)$
 - b) $P(x = 8)$
 - c) $P(x < 1)$
 - d) $P(6 < x < 9)$
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KEY

1. a) 8, 4.8 b) .998 c) .755 d) .750 e) .057 f) .239 g) .892 h) .748 i) .159
2. a) .558 b) .133 c) 4×10^{-9} d) .186