

Mthsc 301 Quiz #4

It is known that 34% of all new small businesses go under within a year once they start. If 10 new small businesses were sampled, what is the probability that

1. One will go under within a year $p = 0.34$, $n = 10$

$$p(1) = \frac{10!}{1!9!} 0.34^1 (1 - 0.34)^9 = 0.08079$$

2. At most one will go under within a year

$$P[X \leq 1] = p(0) + p(1)$$

$$p(0) = \frac{10!}{0!10!} 0.34^0 (1 - 0.34)^{10} = 0.01568$$

Now get $p(0) + p(1)$

3. More than one will go under within a year

$P[X > 1]$. This is more than 1, so 2 or more.

$$1 - [p(0) + p(1)]$$