Name: _____

1. A Study of NFL (National Football League) retirees, ages 50 and older, found that 62.4% have arthritis. You randomly select 75 NFL retirees who are at least 50 years old and ask them whether they have arthritis. What is the probability that exactly 48 will say yes?

   (a) Does binomial distribution apply? What are n, p, q, and x?

   (b) Can you calculate the numbers using binomial distribution formula $(P(\text{x}) = {}_nC_x p^x q^{n-x})$?

   (c) Can you use the normal distribution to approximate x? (Are $np \geq 5$ and $nq \geq 5$?)

   (d) Find the mean and standard deviation for the normal distribution. ($\mu = np$, $\sigma = \sqrt{npq}$)

   (e) Apply the appropriate continuity correction.

(f) Shade the corresponding area under the normal curve.

(g) Find the corresponding z-scores, and their cumulative areas.

(h) Find the probability.