

KEY Practice Worksheet:

1. a) Yes b) Yes c) No ^{no fixed trials?} d) No e) No f) Yes
g) Yes h) Yes i) No j) Yes

$$2. a) P(X=3) = {}_6C_3 (.05)^3 (.95)^3 = .000493$$

$$b) P(X=2) = {}_4C_2 (.18)^2 (.82)^2 = .1307$$

$$c) P(X=3) = {}_5C_3 (.63)^3 (.37)^2 = .3423$$

$$d) P(X=0) = {}_9C_0 (.42)^0 (.58)^9 = .0074$$

$$3. a) P(X=1) = {}_2C_1 (.3)^1 (.7)^1 = .42$$

k binomial pdf (2, .3, 1)

$$b) P(X=3) = {}_4C_3 (.6)^3 (.4)^1 = .3456$$

k binomial pdf (4, .6, 3)

$$c) P(X=0) = {}_5C_0 (.1)^0 (.9)^5 = .59049$$

k binomial pdf (5, .1, 0)

$$d) P(X=4) = {}_{10}C_4 (.4)^4 (.6)^6 = .2508$$

binomial pdf(10, .4, 4)

$$4. a) P(X=3) = {}_9C_3 (.3)^3 (.7)^6 = .2668$$

* binomial pdf(9, .3, 3)

$$b) a) P(X=3) = {}_6C_3 (.05)^3 (.95)^3 = .0021$$

* binomial pdf(6, .05, 3)

$$b) P(X < 2) = {}_6C_0 (.05)^0 (.95)^6 + {}_6C_1 (.05)^1 (.95)^5$$

$$= .9672 \quad + \text{binomial pdf}(6, .05, 2)$$

$$c) P(X=0) = {}_6C_0 (.05)^0 (.95)^6 = .7351$$

* binomial pdf(6, .05, 0)

$$c) P(X \geq 15) = 1 - P(X \leq 14)$$

$$= 1 - \left[{}_{20}C_0 (.5)^0 (.5)^{20} + {}_{20}C_1 (.5)^1 (.5)^{19} \dots \right. \\ \left. + {}_{20}C_{14} (.5)^{14} (.5)^6 \right] = .0207$$

* $1 - \text{binomialcdf}(20, .5, 14)$