Math 112 - Quiz 9

Name __key__

May 1, 2019   Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (2 points) If the probability of the event A is 37%, then what is the probability of A'?
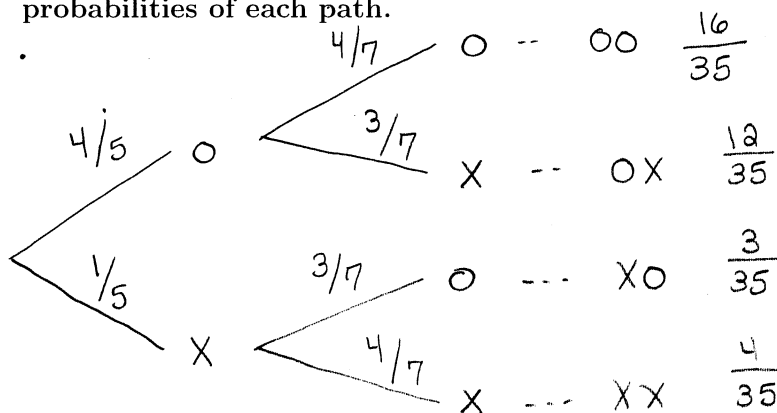
$$P(A') = 1 - P(A) = 1 - 0.37 = \boxed{0.63}$$

2. (8 points) A letter is selected at random from the first box and placed into the second box. Then a letter is selected at random from the second box.

| O   O   O   O   X | | O   O   O   X   X   X |

(a) Sketch the complete tree diagram for this experiment. **Include the probabilities of each path.**

$4/5$ — O
 $4/7$ — O -- OO $\dfrac{16}{35}$
 $3/7$ — X -- OX $\dfrac{12}{35}$

$1/5$ — X
 $3/7$ — O --- XO $\dfrac{3}{35}$
 $4/7$ — X --- XX $\dfrac{4}{35}$

(b) What is the probability of selecting at least one X?

$\{ OX, XO, XX \}$

$$\dfrac{12}{35} + \dfrac{3}{35} + \dfrac{4}{35} = \boxed{\dfrac{19}{35}}$$

(c) What is the probability of selecting O from the first box or O from the second box?

$\{ OO, OX, XO \}$

$$\dfrac{16}{35} + \dfrac{12}{35} + \dfrac{3}{35} = \boxed{\dfrac{31}{35}}$$