

## Math 1160 – Section 6.6 Answer Key

9. **7/12** Draw the tree diagram. Add the probabilities of the branches that end with a red ball.

The probabilities of the different branches are as follows:

$$\Pr(\text{white ball, white ball}) = 1/3$$

$$\Pr(\text{white ball, red ball}) = 1/3^*$$

$$\Pr(\text{red ball, white ball}) = 1/12$$

$$\Pr(\text{red ball, red ball}) = 1/4^*$$

21. Draw the tree diagram.

The probabilities of the different branches are as follows:

$$\Pr(\text{good first serve, win point}) = .45$$

$$\Pr(\text{good first serve, no point}) = .15$$

$$\Pr(\text{bad first serve, good second serve, win point}) = .15$$

$$\Pr(\text{bad first serve, good second serve, no point}) = .15$$

$$\Pr(\text{bad first serve, bad second serve}) = .10$$

a.  $\Pr(\text{win point}) = .45 + .15 = \mathbf{.60}$

b.  $\Pr(\text{first serve good given wins the point}) = .45/.60 = \mathbf{.75}$

30a.  $\Pr(\text{General Motors}) = .60 \times .46 = \mathbf{.276}$

b.  $\Pr(\text{Ford or Toyota}) = (.60 \times .31) + (.40 \times .32) = \mathbf{.314}$