

MA 110 WORKSHEET (8.2) "EXTRA WORKSHEET 3"

Name Solutions

1. Convert the following odds to probabilities:

A. 56 to 95

B. 7 to 13

$$56/(56 + 95) = 56/151$$

$$7/(7 + 13) = 7/20$$

C. 40 to 11

D. 19 to 3

$$40/(40 + 11) = 40/51$$

$$19/(19 + 3) = 19/22$$

2. Convert the following probabilities to odds:

A. $3/5$

B. $19/34$

$$3 \text{ to } (5-3) \rightarrow 3 \text{ to } 2$$

$$19 \text{ to } (34-19) \rightarrow 19 \text{ to } 15$$

C. 0.123

D. 0.87

$$0.123 = 123/1000 \quad 123 \text{ to } (1000 - 123) \rightarrow 123 \text{ to } 877 \quad 0.87 = 87/100 \quad 87 \text{ to } 13$$

3. If the odds of winning a game are 9 to 7, what is the probability of losing the game?

The odds of losing are 7 to 9, so the probability of losing is $7/(9 + 7) = 7/16$.

Or, The probability of winning is $7/(7 + 9) = 7/16$. The probability of losing is $1 - 7/16 = 9/16$.