36. ***A Red Marble*** A box contains 9 red and 2 blue marbles. If you select one marble at random from the box, determine the odds against selecting a red marble. Explain how you determined your answer.

$\frac{f}{s} = \frac{9}{2}$

37. ***Scholarship Award*** The odds in favor of Wendy White winning a scholarship are 7 : 4. Determine the probability that

$\frac{s}{f} = \frac{7}{4}$

a) Wendy wins. $\frac{s}{T} = \frac{7}{11}$

b) Wendy does not win. $1 - \frac{7}{11} = \frac{4}{11}$

38. ***Chicken Wing Contest*** The odds in favor of Boris Penzed winning the chicken wing eating contest are 3 : 8. Determine the probability that Boris will

$\frac{s}{f} = \frac{3}{8}$

a) win the contest. $\frac{s}{T} = \frac{3}{11}$

b) not win the contest. $\frac{8}{11}$

39. ***Getting Promoted*** The odds against Jason Judd getting promoted are 4 : 11. Determine the probability that Jason gets promoted.

$\frac{f}{s} = \frac{4}{11}$ Prob $\frac{s}{T} = \frac{11}{15}$

40. ***Winning a Race*** The odds against Paul Phillips winning the 100 yard dash are 7 : 2. Determine the probability that

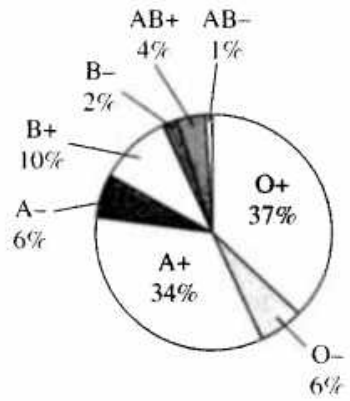
$\frac{f}{s} = \frac{7}{2}$

a) Paul wins. $\frac{2}{9}$

b) Paul does not win. $\frac{7}{9}$

***Blood Types*** *In Exercises 47–52, the following circle graph shows the percent of Americans with the various types of blood.*

**Blood Types of Americans**




Source: 2003 Time Almanac

*If one American is selected at random, use the graph to determine*

47. the probability that the person has A+ blood. $\frac{34}{100} = \frac{17}{50}$
48. the probability that the person has B− blood. $\frac{2}{100} = \frac{1}{50}$
49. the odds against the person having A+ blood. $\frac{66}{34} = \frac{33}{17}$
50. the odds in favor of the person having B− blood. $\frac{2}{98} = \frac{1}{49}$
51. the odds in favor of the person having either O+ or O− blood. $\frac{43}{57}$
52. the odds against the person having either A+ or O+ blood. $\frac{29}{71}$

53. ***Rock Concert*** Suppose that the probability that a rock concert sells out is 0.9. Determine the odds against the concert selling out.

$\frac{S}{T} = \frac{9}{10}$ $\frac{F}{S} = \frac{1}{9}$

54. ***High Blood Pressure*** According to the U.S. Department of Health and Human Services, one in four Americans age 20 and older has high blood pressure. If an American who is age 20 or older is selected at random, determine the odds in favor of this person having high blood pressure.

$\frac{1}{4} = \frac{S}{T}$

$\frac{S}{F} = \frac{1}{3}$

55. ***Bookcase Assembly*** Suppose that the probability that all the parts needed to assemble a bookcase are included in the carton is $\frac{7}{8}$. Determine the odds in favor of the carton including all the needed parts.

$\frac{S}{T} = \frac{7}{8}$ $\frac{S}{F} = \frac{7}{1}$

59. ***Horse Racing*** Racetracks quote the approximate odds against each horse winning on a large board called a *tote board*. The odds quoted on a tote board for a race with five horses is as follows.

| Horse Number | Odds |
|---|---|
| 2 | 7:2 |
| 3 | 2:1 |
| 4 | 15:1 |
| 5 | 7:5 |
| 6 | 1:1 |

Determine the probability of each horse winning the race. (Do not be concerned that the sum of the probabilities is not 1.)