

Example 2. A bookmaker's betting board for a certain race was as follows:

Alan's Lad	6 to 4 on	Danny Boy	8 to 1
Bobcat	evens	Great Hope	15 to 1
Caesar's Palace	5 to 2	Daybreak Dream	25 to 1

Calculate the percentage profit the bookmaker has set for the race.

The odds given must be converted to probabilities. (It is easier to work in percentage probabilities, correct to 1 decimal place, using a calculator where necessary). This is shown in the table.

Horse	Odds	Probability
Alan's Lad	6 to 4 on	$6/10 = 60.0\%$
Bobcat	evens	$1/2 = 50.0\%$
Caesar's Palace	5 to 2	$2/7 = 28.6\%$
Danny Boy	8 to 1	$1/9 = 11.1\%$
Great Hope	15 to 1	$1/16 = 6.3\%$
Daybreak Dream	25 to 1	$1/25 = 3.8\%$
		Sum = 159.8%

If the betting odds are mathematically fair, then since one of these horses is certain to win the race, the sum of the probabilities is  $1 = 100\%$ .

However, the sum of the bookmaker's probabilities exceeds 100% by 59.8% and hence the profit margin set by the bookmaker in this betting table is approximately 59.8%.

{This means that the bookmaker would expect to collect \$160 approximately for each \$100 paid out.}