

### The five formulas

|                               |                                                                     |
|-------------------------------|---------------------------------------------------------------------|
| <b>Decimal</b>                | = fractional (n/d) + 1 = n/d + 1. Example: 5/2 gives 2.5 + 1 = 3.50 |
| <b>Implied probability</b>    | = 1 / decimal = d / (n + d). Example: 3.50 gives 28.6%              |
| <b>American, underdog (+)</b> | = (decimal - 1) x 100. Example: 3.50 gives +250                     |
| <b>American, favorite (-)</b> | = -100 / (decimal - 1). Example: 1.50 gives -200                    |
| <b>Hong Kong</b>              | = decimal - 1. Example: 3.50 gives 2.50 (profit per 1 staked)       |

| Fractional | Decimal | American | Implied % |
|------------|---------|----------|-----------|
| 1/10       | 1.10    | -1000    | 90.9%     |
| 1/8        | 1.12    | -800     | 88.9%     |
| 1/5        | 1.20    | -500     | 83.3%     |
| 1/4        | 1.25    | -400     | 80.0%     |
| 2/7        | 1.29    | -350     | 77.8%     |
| 1/3        | 1.33    | -300     | 75.0%     |
| 4/11       | 1.36    | -275     | 73.3%     |
| 2/5        | 1.40    | -250     | 71.4%     |
| 4/9        | 1.44    | -225     | 69.2%     |
| 1/2        | 1.50    | -200     | 66.7%     |
| 8/15       | 1.53    | -188     | 65.2%     |
| 4/7        | 1.57    | -175     | 63.6%     |
| 8/13       | 1.62    | -163     | 61.9%     |
| 4/6        | 1.67    | -150     | 60.0%     |
| 4/5        | 1.80    | -125     | 55.6%     |
| 5/6        | 1.83    | -120     | 54.5%     |
| 10/11      | 1.91    | -110     | 52.4%     |
| 1/1        | 2.00    | +100     | 50.0%     |
| 11/10      | 2.10    | +110     | 47.6%     |
| 6/5        | 2.20    | +120     | 45.5%     |
| 5/4        | 2.25    | +125     | 44.4%     |
| 11/8       | 2.38    | +138     | 42.1%     |
| 6/4        | 2.50    | +150     | 40.0%     |

| Fractional | Decimal | American | Implied % |
|------------|---------|----------|-----------|
| 13/8       | 2.62    | +163     | 38.1%     |
| 7/4        | 2.75    | +175     | 36.4%     |
| 15/8       | 2.88    | +188     | 34.8%     |
| 2/1        | 3.00    | +200     | 33.3%     |
| 9/4        | 3.25    | +225     | 30.8%     |
| 5/2        | 3.50    | +250     | 28.6%     |
| 11/4       | 3.75    | +275     | 26.7%     |
| 3/1        | 4.00    | +300     | 25.0%     |
| 10/3       | 4.33    | +333     | 23.1%     |
| 7/2        | 4.50    | +350     | 22.2%     |
| 4/1        | 5.00    | +400     | 20.0%     |
| 9/2        | 5.50    | +450     | 18.2%     |
| 5/1        | 6.00    | +500     | 16.7%     |
| 6/1        | 7.00    | +600     | 14.3%     |
| 7/1        | 8.00    | +700     | 12.5%     |
| 8/1        | 9.00    | +800     | 11.1%     |
| 9/1        | 10.00   | +900     | 10.0%     |
| 10/1       | 11.00   | +1000    | 9.1%      |
| 15/1       | 16.00   | +1500    | 6.2%      |
| 20/1       | 21.00   | +2000    | 4.8%      |
| 33/1       | 34.00   | +3300    | 2.9%      |
| 50/1       | 51.00   | +5000    | 2.0%      |
| 100/1      | 101.00  | +10000   | 1.0%      |

### Why implied percentages add up to more than 100% (the margin, or "overround")

Coin-flip style market, both sides priced 1.91.

Implied: 1/1.91 = 52.36% each. Total = 104.71%.

The extra 4.71% is the bookmaker margin (overround).

No-margin ("fair") price: divide each implied % by the total: 50.00% each, which is decimal 2.00.

Three-way example: 2.10 / 3.40 / 3.60 gives 47.62% + 29.41% + 27.78% = 104.81%, margin 4.81%.

### Quick checks before you trust a conversion

A 1.00 decimal price returns only your stake back, so it is never a profit.

Even money is 1/1 = 2.00 = +100 = 50.0% implied. A +100 and a -100 price are the same thing.

Fractional odds quote profit per unit staked; decimal odds quote total return per unit staked (stake included).

Short price (1/4, 1.25, -400) means the market thinks it is likely. Long price (20/1, 21.00, +2000) means unlikely.

The implied % is the chance a price needs to be right just to break even. It is not the true chance, and table values are rounded.