Consider the following wheel from the game show “Wheel of Fortune”. We will be investigating what a contestant can expect to make by spinning the wheel one time.

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1) Calculate the probability of EACH option as a fraction, and as a percentage. You can treat the “Lose A Turn” and “Bankrupt” as winning 0$. Make sure your totals add up! Mr. Smith has done one section for you. Keep the same accuracy as Mr. Smith.

|  |  |  |  |
| --- | --- | --- | --- |
| Section | Probability as a Fraction | Probability as a Decimal (Divide) | Probability as a Percent (x 100) |
| 0$ |  |  |  |
| $150 |  |  |  |
| $200 |  |  |  |
| $250 |  |  |  |
| $300 |  |  |  |
| $400 |  |  |  |
| $450 |  |  |  |
| $500 |  |  |  |
| $600 |  |  |  |
| $750 |  |  |  |
| $900 | $$^{1}/\_{24}$$ | 0.0417 | 4.17% |
| $2,500 |  |  |  |
| $5,000 |  |  |  |
| Totals |  |  |  |

2) An interesting thing we can do with these values is calculate the “average” value of one spin on the wheel we will be using the decimal probabilities you calculated earlier.

|  |  |  |
| --- | --- | --- |
| Section | Probability as a Decimal | Multiply the “$” value by the decimal probability |
| 0$ |  |  |
| $150 |  |  |
| $200 |  |  |
| $250 |  |  |
| $300 |  |  |
| $400 |  |  |
| $450 |  |  |
| $500 |  |  |
| $600 |  |  |
| $750 |  |  |
| $900 | 0.0417 | $37.53 |
| $2,500 |  |  |
| $5,000 |  |  |
| Totals |  |  |

This value you get by multiplying the probabilities by the outcome value is called the **expected value**. You’ve just calculated what a player can make by making one spin!