

5.4 Worksheet - Geometric Probability Distributions

MDM4U

Jensen

- 1)** To start her old lawn mower, Rita has to pull a cord and hope for some luck. On any particular pull, the mower has a 20% chance of starting.
- Find the probability that it takes her exactly 3 pulls to start the mower.
 - Find the probability that it takes her 10 or fewer pulls to start the mower.
- 2)** Marti decides to keep placing a \$1 bet on number 15 in consecutive spins of a roulette wheel until she wins. On any spin, there's a 1-in-38 chance that the ball will land in the 15 slot.
- How many spins do you expect it to take until Marti wins? Justify your answer.
 - What is the probability that it takes 5 spins before Marti wins?
 - What is the probability that it will take Marti more than 50 spins to win?
- 3)** To finish a board game, Sarah needs to land on the last square by rolling a sum of 2 with two dice.
- What is the probability that it takes her 8 tries before she wins?
 - What is the probability that she wins in under 5 tries?
 - How many rolls would you expect it to take until she wins?
- 4)** Suppose that 1 out of 50 cards in a scratch-and-win promotion gives a prize.
- What is the probability of you not winning until your fourth try?
 - What is the probability that of winning in 10 tries or less?
 - What is the expected number of scratch-and-win cards you need to play to get your first win?
- 5)** A top NHL hockey player scores on 93% of his shots in a shooting competition.
- What is the probability that the player will not miss the goal until his 20th try?
 - What is the probability that he takes more than 20 shots before missing?
 - What is the expected number of shots taken until he gets his first miss?