



Problem of the Week

Problem B and Solution

A Little Rain Must Fall

Problem

Excessive rainfall may occur during weather events such as hurricanes, or in some places, simply as a part of everyday life.

- (a) During Hurricane Harvey in 2017, almost 75 mm of rain fell in one hour in Houston. If rain continued to fall at that rate for 24 hours, how much rain would fall? Express your answer in metres.
- (b) Mawsynram, India is recognized as one of the wettest places on Earth, with an average annual rainfall of 11 872 mm, most of which falls during the monsoon season. If the rain was spread out evenly over the whole year, how much rain, in mm, would fall each day? Round your answer to one decimal place.
- (c) Find the average annual rainfall in your community. How many times more is Mawsynram's average annual rainfall than the average annual rainfall in your community? Round your answer to one decimal place.



Solution

- (a) If 75 mm of rain fell in each hour for 24 hours, the total amount of rain would be $75 \times 24 = 1800$ mm, or 1.8 metres.
- (b) If a total of 11 872 mm of rain was spread out evenly over the whole year, then over 365 days, the daily average would be $11\,872 \div 365 \approx 32.5$ mm.
- (c) Answers will vary. The average annual rainfall for the city of Toronto is 831 mm*. Therefore, the average annual rainfall in Mawsynram is $11\,872 \div 831 \approx 14.3$ times more than the average annual rainfall of Toronto.

*Source: <https://www.currentresults.com/Weather/Canada/Cities/precipitation-annual-average.php>