Problem of the Week
Problem B and Solution
That's A Lot of Reading

Problem

The first National Geographic magazine was published in September 1888.

a) Assume that the magazine was published every month of each year since the first publication. By the end of this year, how many National Geographic magazines would you have if you had one copy of each magazine? That is, how many magazines would be in the complete collection from September 1888 to December 2020?

b) Assuming each magazine has 145 pages, how many pages would be in one complete collection?

c) Assume that each issue is approximately 5 mm thick. If you stacked the magazines from one complete collection one on top of the other, would the pile be taller than your classroom? Explain your reasoning.

d) Assume that each National Geographic magazine is 25.5 cm tall. If you laid the magazines from one complete collection end-to-end, would they go around a 400 m track?

Solution

(a) The complete collection would be as follows:
1888: 4 issues
1889 to 2020: 12 issues each year × 132 years = 1584 issues
Thus, there would have been a total of 4 + 1584 = 1588 issues between September 1888 and December 2020.

(b) There would be 1588 issues × 145 pages per issue = 230 260 pages in one complete set.

(c) The total height would be 1588 issues × 5 mm thick = 7940 mm or 7.94 m. Unless your classroom has a cathedral ceiling, the magazine stack would be higher than your classroom ceiling.

(d) The distance covered by laying the magazines end-to-end would be 1588 issues × 25.5 cm = 40 494 cm or 404.94 m, which is about 5 m longer than a 400 m track.