

Estimathon Questions and Answers

1. How many Macbook Pros would you have to stack (the more stackable way) to be as tall as the Washington Monument?

Answer: 7011

Explanation: The Washington Monument is 555 feet (6660 inches) tall and a Macbook Pro is 0.95 inches tall.

2. How many words in the Oxford English Dictionary (171, 476 words) start with “math”?

Answer: 19

Explanation: I went and counted all the words starting with “math” and found 19.

3. How many TI-84 Plus calculators were sold between June 2011 and June 2012?

Answer: 1,670,000

Explanation: According to the Washington Post, “Texas Instruments accounted for 93 percent of the U.S. graphing calculator sales from July 2013-June 2014. Casio took the other 7 percent, according to NPD data. During that period 1.6 million graphing calculators were sold, a decrease from sales of 1.67 million during July 2011-June 2012.”

4. How many pencils would equal the mass of the math textbooks each student uses during their high school years (assume 1 textbook per year)?

Answer: 800

Explanation: The average textbook weighs 2.5 pounds (40 ounces) and the average pencil weighs 0.2 ounces.

5. How many middle school students would have to sit on a Boeing-757 plane for it to be unable to take off the runway?

Answer: 2,200

Explanation: The maximum takeoff weight of a Boeing-757 is 220,000 pounds. The average middle schooler weighs 100 pounds.

6. How many blades of grass are in the average square foot (off grass)?

Answer: 3,000

Explanation: According to the Oklahoma Museum of Natural History, “The average square foot of grass has 3,000 blades.”

7. What percent of undergraduate engineering students are women?

Answer: 21.6%

Explanation: “In 2017, 21.8% of undergraduate engineering students were women, and 20.6% of undergraduate engineering degrees were awarded to women. The enrollment of women in engineering climbed from 16% in 1991 to over 20% in 2001, but by 2009 this number had fallen to 17%.”

8. What order of magnitude (power of 10) do you receive when calculating how many Olympic sized swimming pools (50 m x 25 m) the Atlantic Ocean fills?

Answer: 14

Explanation: The Atlantic Ocean has 74,471,500 cubic miles of water ($8.20018456 \times 10^{19}$ gallons) while an Olympic swimming pool has 660,000 gallons of water. Dividing gives us 1.2424522×10^{14} .

9. How many times is the number 7 found in the first 1000 digits of pi? How many times is the number 1 found in the first 1000 digits of pi? Multiply your answers.

Answer: 11,020

Explanation: The number 7 appears 95 times and the number 1 appears 116 times.

10. How many times can the name “Ada” be found on the Wikipedia page of the famous 19th century mathematician, Ada Lovelace?

Answer: 185

Explanation: Test it!

11. How many eggs will the average chicken lay during their life cycle?

Answer: 530

Explanation: “Most hens have two productive years of egg laying and taper off as they age. Therefore, the average hen will lay about 530 eggs throughout her lifetime. Illness, the quality of care or of food can make a difference in how frequently a hen produces eggs.”

12. When was Principia Mathematica by Issac Newton originally published? Add the year, month, and day together.

Answer: 1699

Explanation: Year: 1687, Month: July (7), Day: 5

13. How many times would you need to connect the world’s longest ship (The Seawise Giant) head to tail to stretch from New York City to DC (ignore any obstacles and assume a straight path)?

Answer: 727

Explanation: The world’s longest ship is 1,483 ft and the distance from NYC to DC is 204.11 miles or 1077700.8 feet.

14. What percent of American high schools offer AP Calculus? What percent of American high schoolers take calculus while in high school? Subtract your answers and give the absolute value.

Answer: 38

Explanation: “Today, some 800,000 students nationwide take calculus in high school, about 15 percent of all high schoolers.” and “Only 53% of U.S. high schools offer AP Calculus.”

15. How many gallons of apple juice could fit in a school bus?

Answer: 7181

Explanation: The average school bus has a volume of 960 cubic feet. A gallon of apple juice has a volume of 0.133681 cubic feet.