Sample questions

Tom Weston

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1. (literature)How many syllables are there in a classical Shakespearean sonnet?
   14 lines of iambic pentameter = 14*10=140

2. (geography)Which countries does the equator pass through?
   São Tomé and Principe, Gabon, Republic of the Congo, The Democratic Republic of the Congo, Uganda, Kenya, Somalia, Maldives, Indonesia, Kiribati, Ecuador, Colombia, Brazil

3. (history) Which of these events came first?

   (a) The Norman Conquest or Genghis Khan invading as far as Crimea
       Norman conquest 1066 - Khan in Crimea 1220

   (b) the storming of the Bastille or the Boston tea party
       Bastile 1789 - Boston Tea Party 1773

   (c) the collapse of the Mayan civilisation or the fall of the Roman empire
       Maya 1st century CE- Rome 5th century CE

   (d) the first Opium war or the US civil war
       1st Opium War 1839-1842 - US Civil 1861 - 1865

   (e) women's suffrage in Turkey or women's suffrage in Spain
       Turkey 1934 - Spain briefly in 1939 but per not permanently till after Franco, 1973

   (f) the single continent of "Pangaea" starting to break up or Tyrannosaurus Rex walking the earth
       Pangaea breakup early/middle Jurassic 175Ma - T.rex Late Cretaceous 66Ma i.e. Pangaea broke up first

4. (maths)The Met Office, NASA and the NOAA all list the last five years as the hottest five years on record. Suppose there were no warming

trend, and there were only 10 years of historical data. What is the probability of the last five years being coincidentally the hottest? (in reality, the Met Office et al. have data in a modern format since 1880). The number of ways of ordering the 10 years is 10!. Of those, 5! × 5! have the last five years as the hottest. Therefore probability is 5! × 5!/10! = 1/252.

5. (religion) Which religion categorizes living creatures (animals and plants) by the number of senses they possess & forbids its lay members from eating living entities with more than two senses? (more than one if you are monk)
Jainism

6. (literature) How many of Shakespeare's plays feature a "Henry" in the title?
7 - Henry IV parts 1+2, Henry V, Henry VI parts 1+2+3, Henry VIII (shared authorship with John Fletcher)

7. (vocabulary) (**) Find an exawple of a word with three consecutive vowels where the middle vowel has a diaeresis?
e.g. the French word for pottery *faïence*

8. (current affairs) In 2018 who was paid the most, the best paid CEO of a public listed company, the best paid sportsperson or the best paid actor?
CEO: Elon Musk paid USD 2.3 billion (although he was paid in derivatives linked to the future performance in his company, zero in cash)
In terms of salary, the highest was David M. Zaslav USD 129 million
Sport: Floyd Mayweather USD 285 million
Actor: George Clooney USD 239 million

9. (maths) You can create a model of a Möbius strip by taking a strip of paper, putting one twist in it and joining the ends together (a stapler works well). If having done this, you take a pair of scissors, pierce the strip in the middle, and cut along the entire length (without touching either edge) until you get back to the original point, what are you left with?
a circular strip of paper of twice the circumference of the original and two twists in it.

10. (literature) For the first 25 Mr Men books (up to and including "Mr Impossible"), 16 of the eponymous characters are named after adjec-

tives. List the others.

Verbs or nouns:Tickle, Sneeze, Bump, Snow, Daydream, Jelly, Chatterbox, Bounce, Muddle
Adjectives:Greedy, Happy, Nosey, Messy, Topsy-turvey, Silly, Uppity, Small, Forgetful,Noisy, Lazy, Funny, Mean, Fussy,Dizzy, Impossible

11. (geography) Which is the smaller: the shortest distance between Alaska and the closest point in the other 49 US states or the shortest distance between Puerto Rico and the 50 US states?
From the furthest southern point in Alaska, in the strip of land than runs down the side of Britsh Colombia (near the town of Ketchikan) to the top NW corrner of Washington state 954km.
From the NW corner of Puerto Rico to the southern tip of Florida 1564km.

12. (astronomy) (**)Seen from the Sun's north pole, the Earth rotates around the Sun in a counterclockwise direction. Which of the following rotate in the opposite, clockwise, direction?

    (a) the Sun about its own axis
    (b) the Earth about its own axis
    (c) the Moon about the Earth
    (d) the Moon about its own axis
    (e) the 8 other planets around the Sun
    (f) the 8 other planets around their own axes

    All rotate in the same counterclockwise prograde motion (i.e. rotation about axis is same direction as rotation the central body) apart from Uranus and Venus which rotate around their own axes in the opposite direction.

13. (biology) If a mature deciduous tree weights 1 tonne, what is the net cumulative mass of CO_2 it has removed from the atmosphere ("sequestered") in the course of its life?
Mature wood is made up principally of cellulose which has the chemical formula $(C_6H_{10}O_5)_n$. All the carbon required to synthesise this wood comes from atmopsheric CO_2. The atomic masses of carbon, hydrogen and oxygen are 12, 1 and 16. Therefore the fraction of

the mass of the tree that comes from carbon is 72/162. The fraction of mass of carbon in CO_2 is 12/44. Therefore the cumulative mass of CO_2 the tree must have removed from the atmosphere is $1 tonne \times 72/162 \times 44/12 = 1.63 tonnes$.