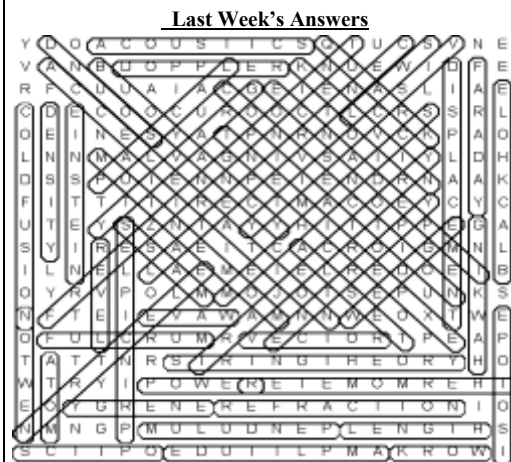
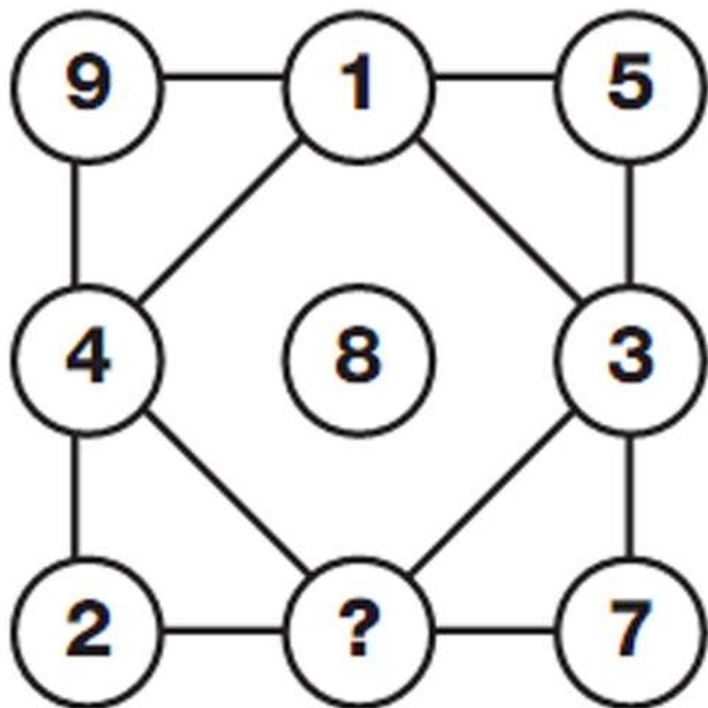


Welcome back. I hope you had a good weekend. We have a holiday this Wednesday. In the UK, public holidays¹ always move to the closest Monday, that way you get a three-day weekend every time. That is obviously² good, but I kind of like having the week broken up with a holiday. Two days of work, a holiday, two more days of work and then the weekend. That's not a bad way of doing things. Anyway, it's Labor Day³. So, go home and be grateful⁴ for all the people that work hard so you can have a roof or food or clean clothes.

Something You Didn't Know (The moon)

1. The moon is 1/4 the size of the earth and it weighs 10,000,000,000,000,000,000kg.
2. The moon is in synchronous⁵ rotation⁶. That means it turns at the same speed it orbits⁷ earth so we only ever see one side of it. The side of the moon we can't see is called the "dark side".
3. Nobody knows how the moon was formed⁸ but many people think it happened when another planet⁹, the size of Mars¹⁰, hit the earth, broke up¹¹ and became the moon.
4. The moon moves away from the earth at 3.8cm every year. In about 50 billion¹² years its orbit will become circular¹³ and it will stop moving away. At that time the earth will not have tides¹⁴. However, the sun will have become a red giant¹⁵ long before that and there will be no earth.
5. 12 astronauts¹⁶ have walked on the moon. The first was Neil Armstrong in 1969 and the last was Eugene Cernan in 1972. One day we might be able to have vacations on the moon.



Announcements

Not sure. My diary is in my bedroom and my daughter is asleep. I can't get it without waking her up. So, classes, a holiday, more classes. Probably.

Supermoon

Last week's full moon was very bright. In fact¹⁷, it was the brightest full moon since January 26th, 1948! The moon looked 14% bigger and 30% brighter¹⁸ than a usual full moon¹⁹. It was very cloudy in Sapporo but the clouds lifted²⁰ at about 10pm and it was very clear²¹. It was bright enough²² to see by²³. This won't happen again until November 25th, 2034. I will be 57!



The moon looked so much bigger and brighter than usual because it was as close to the earth as it ever gets. The moon doesn't orbit the earth in a circle. It has an elliptical²⁴ orbit²⁵ which brings it closer and then farther away²⁶ from the earth. At its closest, last week, it was 355,655km away. This supermoon can make slightly²⁷ larger tides than usual.

At its farthest point²⁸ the moon is 406,000km away from the earth. The moon orbits the earth once a month but to have a "supermoon" a full moon has to happen at the same time the moon is closest to earth. This happens about once a year, but some supermoons are more "super". If you are patient, the closest supermoon of the century will be December 6th 2052. I will be 75. I wonder what I'll be doing. I better write it down in my diary or I'll forget.



- 1.Public holiday 祝日 2.Obviously 明らかに 3.Labor Day 勤労感謝の日 4.Grateful 感謝
 5.Synchronous 同期 6.Rotation 回る 7.Orbit 軌道を回る 8.Form 形成する 9.Planet 惑星 10.Mars 火星
 11.Break up 壊れてバラバラになる 12.Billion 10億 13.Circular 円 14.Tide 潮汐 15.Red giant 赤色巨星
 16.Astronaut 宇宙飛行士 17.In fact 実は 18.Bright 明るい 19.Full moon 満月 20.Clouds lift 雲がなくなる
 21.Clear 澄んだ夜空 22.Enough 十分 23.See by ~の光で見える 24.Elliptical 楕円形の
 25.Orbit 軌道 26.Farther away より遠い 27.Slightly 少しい 28.Farthest point 最端