

Questions About Numbers

Mathematics Teacher, March 1986

1. Gold alloys used to make jewelry are measured by a symbol such as 18K, indicating the karats. What number is used as a measure of the karats for pure gold?
2. In the musical time signature "3 over 4," the "3" indicates three beats to each measure. What does the 4 indicate?
3. An example of a Social Security number is 123-45-6789. What special information is provided by the first three digits?
4. The number 4 is significant in naming a female horse. A filly is a female horse less than 4 years old. What is the name given to a female horse more than 4 years old?
5. Relative humidity is given as a percentage, such as 45%. The percentage gives the ratio of what two measurements?
6. Many American spacecraft have names ending with a numeral, such as Apollo 15. The first six American spacecraft with humans aboard had different names, but all the names ended with the same numeral. What was that numeral?
7. One of the numbers used to describe photographic film is an ASA number, such as ASA 100 or ASA 200. What does the ASA number indicate?
8. The size of a shotgun is given in terms of its gauge. What is the meaning of "12 gauge?"
9. The pH number is used to discuss acid rain and to indicate whether soil is acidic or alkaline. A neutral solution that is neither acidic nor alkaline has what pH number?
10. In human beings, each cell (except egg and sperm cells) contains how many chromosomes?
11. New air conditioners ordinarily have a tag with an EER rating, such as "8.0 EER." EER stands for Energy Efficient Ratio, so that 8.0 should be interpreted as the ratio 8.0 to 1. What does each of the two numbers in the ratio represent?
12. On many ships, time is signaled by the ship's bell. What is the significance of eight bells?

13. A hurricane has wind speeds of 75 mph and above. What is the name given to winds with wind speeds of 25 – 31 mph?
14. An amateur rugby team (rugby union) consists of how many players who start?
15. Oil production is generally measured in barrels. One barrel of oil contains how many liters (or gallons)?
16. Passenger ships are usually measured in terms of gross tonnage, which is a measure of volume rather than weight. What does it mean to say the gross tonnage of a ship is 20 000?
17. The specific heat of water is 1. What is the meaning of a specific heat of .5 for a substance?
18. In adults, cholesterol levels under 200 are generally considered desirable. What does a cholesterol level of 200 mean?
19. Historically, one way of measuring the brightness of a star was in terms of magnitude, for example, first magnitude, second magnitude, and so on. A star of first magnitude is approximately how many times as bright as a star of second magnitude?
20. The solar constant is a unit used to describe the amount of solar energy hitting the top of the earth's atmosphere. It is defined as the number of calories received per square centimeter in one minute. The solar constant has a value equal to approximately how many calories?