

Match these women with their accomplishments & photographs

1. Florence Nightingale
2. Evelyn Boyd Granville
3. Ada Lovelace
4. Mary Cartwright
5. Fern Hunt
6. Emmy Noether

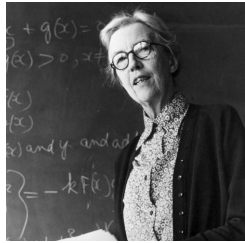
- α . She worked for IBM on the Project Vanguard and Project Mercury space programs, analyzing orbits and developing computer procedures.
- β . One of the first mathematicians working in chaos theory, she served as the President of the London Mathematical Society.

- γ . She won the Arthur S. Flemming Award for Outstanding Federal Service for her work in the computing/applied math lab at the National Institute of Standards and Technology.
- δ . People describe her as "the world's first computer programmer" because of her work on Babbage's analytical engine.

- ϵ . This famous mathematician made groundbreaking contributions to both abstract algebra and theoretical physics.
- ω . She was a pioneer in the graphical representation of statistics, credited with developing a form of the pie chart now known as the "polar area diagram".



A



B



C



D



E



F

Solutions: 1wF, 2aD, 3bA, 4bB, 5rE, 6eC
 7) $a = 1/2$ and $b = -1/2$ is one rational possibility; a and b can not be irrational. 8) The Law of Sines tells us the tree is ≈ 47.8 meters tall. 9) Ann ordered the soup. 10) We're the same age (40)! 11) The number of occurrences of 0 is 1, of 1 is 7, of 2 is 3, of 3 is 2, of 4 is 1, of 5 is 1, of 6 is 1, of 7 is 2, of 8 is 1, and of 9 is 1. $12) 2 \times 37846 = 75692, 2 \times 12734 = 25468, \text{ or } 2 \times 25734 = 51468, \text{ etc.}$

Problem Corner

7. Suppose $a \neq b$, and that $a - b$ and $a^2 - b^2$ are both integers.

Must a and b be rational?

8. A tree grows vertically on a hillside. The hill is at a 16-degree angle from the horizontal; the tree casts an 18-meter shadow up the hill when the angle of elevation of the sun measures 68 degrees.

How tall is the tree?

9. Ann, Barb, Cath, and Deb were at dinner. Cath sat opposite Ann. Deb sat at Ann's right, opposite Barb. Barb and Deb ordered soup. Cath ordered lasagna. Ann ordered like this: "If the woman at the left of the woman opposite the woman who ordered lasagna is not having what the woman across from the woman at the right of the woman at my left is having, then I'll have what the woman across from the woman at the right of the woman opposite me ordered. Otherwise, I'll have pizza."

What should the server bring Ann?

10. This summer, my friend, my daughter, and I have a joint birthday, celebrating the fact that our average age is now 32. Eight years from now, I'll be twice as old as my daughter will be, which is funny: four years ago, my friend was 3 times as old as my daughter was.

Who is older, my best friend or me?

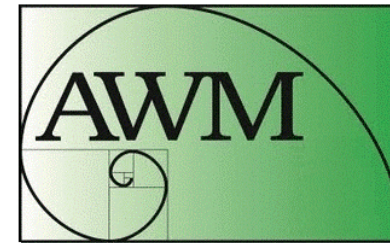
11. Fill in the blanks in the following sentence:

In this sentence, the number of occurrences of 0 is __, of 1 is __, of 2 is __, of 3 is __, of 4 is __, of 5 is __, of 6 is __, of 7 is __, of 8 is __, and of 9 is __.

12. It's said two wrongs don't make a right, but is it always true? Crack this code:

$$\begin{array}{r} \text{WRONG} \\ + \text{WRONG} \\ = \text{RIGHT} \end{array}$$

Each letter represents a different digit, and no "0" is allowed.



ASSOCIATION FOR
WOMEN IN MATHEMATICS

www.awm-math.org

The Association for Women in Mathematics (AWM) is a non-profit organization founded in 1971. The association sponsors programs and awards to encourage women in the mathematical sciences, including

- Travel grants for women researchers,
- Mentoring travel grants for women,
- Workshops for women graduate students and post-doctoral mathematicians,
- AWM student chapters,
- Noether, Falconer and Kovalevsky Lectures,
- Ruth I. Michler Memorial Prize, AWM-Birman Research Prize, AWM-Microsoft Research Prize and AWM-Sadosky Research Prize.

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