

Square Root Magic!

1. Think of any nonzero number.
2. Multiply your number by 3, and square the result.
3. Multiply your original number by 4, and square the result.
4. Add these two squares together.
5. Divide this sum by the square of your original number.
6. Compute the square root of this value.

Secret: The answer is always 5!

Why it works

1. a
2. $(3a)^2 = 9a^2$
3. $(4a)^2 = 16a^2$
4. $9a^2 + 16a^2 = 25a^2$
5. $25a^2 \div a^2 = 25$
6. $\sqrt{25} = 5$