Lonely? math can find you love

OkCupid is the world's fastest-growing online dating site. Its mission statement is: " We use math to get you dates.

" OkCupid simplified an emotion so complex that it has been alternately described as " A battlefield" and " What makes you beautiful" into simple arithmetic. OkCupid's mission is done through their matching algorithm. This algorithm matches a test-taker to a date. An algorithm is essentially a process, a list of steps developed to achieve any goal. While humans can follow algorithms, such as when speed-solving a Rubik's Cube; because of their very nature, computers excel at computing algorithms. This was the basis of OkCupid's proposal.

OkCupid's objective, the solution reached through its algorithm, was to calculate the compatibility possibility of two individuals as a percentage. OkCupid mathematicians determined this percentage using the love of all classical, deterministic scientists: data. They obtained this data through the results of a personality quiz taken before applying for a membership in OkCupid. This quiz, however, does not only focus on aspects of the quiz-taker's personality. It also questions them on their personality preferences for a potential mate. Lastly, the significance of a single answer is ranked by the test-taker and potential mate.

An example OkCupid personality test question would be " Doctor Who or Sherlock?" Possible answers are: 1. Doctor Who 2. Sherlock As an avid Whovian, this test-taker chooses 1 and rates this question as Very Important. His or her potential mate likes Sherlock's analytic skills, but isn't as fervent a fan. Therefore, the potential mate chooses 2 and ranks it Somewhat

Important. Another example question would be " Is the book always better than the movie?" Possible answers are: 1.

Yes 2. No This test-taker is also a literary enthusiast, so he or she picks 1 and rates it " Mandatory". Because the potential mate just watched the live-action version of " The Cat in the Hat" and had his or her childhood ruined, the potential match also chooses 1 and ranks it Mandatory. Since this personality quiz's results are calculated by a computer, importance level (from Irrelevant to Mandatory) must be assigned a numerical value. The values below are not the actual numbers but are arbitrarily picked, as the algorithm is patent-protected. Irrelevant 0 Not Very Important 10 Somewhat Important 20 Very Important 40 Mandatory 100 The test-taker indicted that the first question's results were Very Important and the second question was Mandatory.

Therefore, there are 140 potential points for the match to earn. The match answered the second question correctly, so he or she receives 100/140 points, or 71%. The match is 71% compatible with the test-taker. The match ranked the first question as Somewhat Important and the second as Mandatory. Using the test-taker's answers, she or he received 100/120 points, so the test-taker is 83% compatible with the match.

To find the overall match percentage, OkCupid finds the geometric mean of the two match percentages by multiplying the two and finding the square root of the product. OkCupid uses a geometric mean instead of a simple arithmetic mean (adding both numbers and dividing by two) because a match percentage is the probability of a match, and the company wishes to

find the probability of a match for each person. The geometric mean of the two people in the examples above is 77%, but that does not necessarily rule out the possibility of a match. OkCupid's margin of error is accounted for with this algorithm: 1/ number of questions answered= reasonable margin of error. This means that the true match potential between these two people is actually equal to 77% +/- 50%.

Math can still help them find love. But do these questions accurately represent the personality of a potential lover? To test my hypothesis, I completed one of OkCupid's personality surveys. " People hate you. ParisHiltonhates Nicole Richie. Lex Luther hates Superman.

Garfield hates Mondays. But none these even rates against the insurmountable hate that people have for you. I mean, you're pretty clever and you know it. You love to flaunt your potential. Heard the word ' arrogant' lately? How about ' jerk?' Or perhaps they only say that behind your back.

That's right. I know I can say this ' cause you're not going to cry. You're not exactly the most emotional person. You'd rather spend time with your theoretical questions and abstract theories than with other people." OkCupid must be psychic. Math really can help me find true love.