

UCD STUDENTS CRACK THE MATHEMATICAL FORMULA FOR THE PERFECT FATHER'S DAY

15th June 2009

Students attending a summer school at UCD have been challenged by One4all to develop the perfect equation for Father's Day.

One4all wanted to examine Father's Day from a fresh perspective and see if mathematics could be applied to the vexing question of what makes the perfect Father's Day.

Dr Maria Meehan, of the School of Mathematical Sciences at UCD presided over the task and selected the winners - who each received a One4all Gift Card. Craig Doyle aged 16 and Matthew Jordan aged 17 both from Wexford devised the winning function.

$$U(s, b, m, p) = 2(s-8) - b^2 + 9b + 3p/2 + em/m$$

Where:

- o U is Dad's happiness/satisfaction measured in utils;
- o s is the numbers of hours Dad spends sleeping ($0 \leq s \leq 24$);
- o b is number of items given to Dad for breakfast in bed ($b \geq 0$);
- o p is the number of hours of peace for Dad ($0 \leq p \leq 24$); and
- o m is money spent or received by Dad ($m \neq 0$).

Here is a quick justification for each component of the equation:

$2(s - 8)$

If Dad spends less than 8 hours sleeping, then $2(s - 8)$ will be negative - Dad not happy!

If Dad sleeps exactly 8 hours, this will be 0 —Dad is neither happy or sad. If Dad sleeps more than 8 hours (i.e. has a sleep-in), $2(s - 8)$ will be positive - Dad happy!

$-b^2 + 9b$

If Dad gets nothing for breakfast, he is neither happy nor sad. His happiness is at a maximum if he gets 4.5 items. After 9 items, his happiness is negative, indicating that he has eaten too much and feels sick.

$3p/2$

This increases with each hour of peace Dad gets.

em/m

If Dad receives money ($m > 0$) his happiness increases. If Dad has to spend money ($m < 0$) his happiness decreases.

Dr Maria Meehan says: "This was a fun task that had some serious mathematics at its core. The students were able to apply the mathematics they had learned at school to a real-world problem in a creative and imaginative way."

One4all has the perfect present for dad this year. With more than 4,000 outlets to spend the One4all Gift Voucher and Gift Card, including Woodies DIY, B&Q, HMV, Great Outdoors, Topman, Sunway Travel and Irish Ferries, dad can choose whatever he wants this Father's Day.

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Limited edition One4all Father's Day Gift Cards are also available online at www.one4all.ie. Wrap up your gift in a gift tin or choose a cuddly teddy bear for dad.

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