## Math 105: Multivariable Calculus Introduction to Sequences and Series

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> Bronfman Science Center Williams College, April 2011

#### **Birthday Problem**

How large must N be for there to be at least a 50% probability that two of the N people share a birthday?



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How large must N be for there to be at least a 50% probability that two of the N people share a birthday?

- (A) 11 people
- (B) 22 people
- (C) 33 people
- (D) 44 people
- (E) 90 people
- (F) 180 people
- (G) 365 people
- (H) 500 people.

#### **Birthday Problem**

How large must N be for there to be at least a 50% probability that two of the N people share a birthday?



# How large must N be for there to be at least a 50% probability that two of N Plutonians share a birthday?



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- (A) 110 people
- (B) 220 people
- (C) 330 people
- (D) 440 people
- (E) 1,000 people
- (F) 5,000 people
- (G) 10,000 people
- (H) 20,000 people
- (I) more than 30,000 people.

How large must N be for there to be at least a 50% probability that two of N Plutonians share a birthday? 'Recall' one Plutonian year is about 248 Earth years (or 90,520 days).

