Mathemagic

1. Choose any number from 11 to 30 inclusive.

2. Add 3.

3. Double your answer.

4. Subtract 10.

5. Divide by 2.

6. Add 7.

7. Subtract your original number.

Did you end with 5?

We can prove why this trick works using algebra:

Choose any number from 11 to 30 inclusive.	x
Add 3.	$x + 3$
Double your answer.	$2(x + 3) = 2x + 6$
Subtract 10.	$2x + 6 - 10 = 2x - 4$
Divide by 2.	$(2x - 4)/2 = x - 2$
Add 7.	$x - 2 + 7 = x + 5$
Subtract your original number.	$x + 5 - x = 5$

Your homework (due Tuesday, March 8) is to **create your own** mathemagic puzzle and prove why it works. Have fun with this! It should be something easy enough for you to ask other people, but challenging enough so that they don't know why it works immediately.