



## THE MATHEMATICS POWERING THE 3FOR5 METHOD

The 3for5 Method is a novel social fundraising and awareness-generation mechanism that relies on the trust inherent within friendships and social relationships. In the following table, the math powering the method is demonstrated. By launching the 3for5 Movement with only a single person, (assuming every donor gives only \$5 and gets at least three friends to do the same), it takes only 15 network waves of friends inviting friends to involve more than 21 million people and raise over \$107 million for clean water in the developing world.

Wave #	# of Droplets	Donations	Cumulative # of Droplets	Cumulative Donations
0	1	\$5	1	\$5
1	3	\$15	4	\$20
2	9	\$45	13	\$65
3	27	\$135	40	\$200
4	81	\$405	121	\$605
5	243	\$1,215	364	\$1,820
6	729	\$3,645	1,093	\$5,465
7	2,187	\$10,935	3,280	\$16,400
8	6,561	\$32,805	9,841	\$49,205
9	19,683	\$98,415	29,524	\$147,620
10	59,049	\$295,245	88,573	\$442,865
11	177,147	\$885,735	265,720	\$1,328,600
12	531,441	\$2,657,205	797,161	\$3,985,805
13	1,594,323	\$7,971,615	2,391,484	\$11,957,420
14	4,782,969	\$23,914,845	7,174,453	\$35,872,265
15	14,348,907	\$71,744,535	21,523,360	\$107,616,800
<b>TOTAL</b>	<b>21,523,360</b>	<b>\$107,616,800</b>		

The formula to compute the total number of people in a fully populated network wave is  $3^{(W)}$ , where W is the current wave number whose total is being calculated (wave numbers start at 0). In order to calculate the total number of people in a fully populated network, one must take the sum of all the wave-levels, up to and including the current level. More formally, this formula<sup>1</sup> is:  $\sum_{W=1...W} (3^{(W)})$ .

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<sup>1</sup> This formula assumes that the 3for5 Movement is launched with only a single person or *droplet* and every network wave is fully populated. In reality, the movement will launch with many *droplets* (200-500), and every network wave will likely not fully populate.