

n = total number of days

x = total on given day

1 Day = Always 0% improvement

Even Days (2, 4, 6, etc)

$$\left(\frac{\sum_{\left(\frac{n}{2}\right)+1}^n \left(x_{\left(\frac{n}{2}\right)+1} + x_{\left(\frac{n}{2}\right)+2} + \dots \right) - \sum_1^{\left(\frac{n}{2}\right)} \left(x_{\left(\frac{n}{2}\right)} + x_{\left(\frac{n}{2}\right)-1} + \dots \right)}{\sum_1^{\left(\frac{n}{2}\right)} \left(x_{\left(\frac{n}{2}\right)} + x_{\left(\frac{n}{2}\right)-1} + \dots \right)} \right) \times 100$$

Odd Days (3, 5, 7, etc)

$$\left(\frac{\sum_{Abs\left(\frac{n}{2}\right)+1}^n \left(x_{\left(\frac{n}{2}\right)+1} + x_{\left(\frac{n}{2}\right)+2} + \dots \right) - \sum_1^{Abs\left(\frac{n}{2}\right)+1} \left(x_{Abs\left(\frac{n}{2}\right)+1} + x_{\left(Abs\left(\frac{n}{2}\right)+1\right)-1} + \dots \right)}{\sum_1^{Abs\left(\frac{n}{2}\right)+1} \left(x_{Abs\left(\frac{n}{2}\right)+1} + x_{\left(Abs\left(\frac{n}{2}\right)+1\right)-1} + \dots \right)} \right) \times 100$$

Whenever a leaderboard is created the %improvement is always calculated down the middle from start to end.
 So, using an example of a 5 day challenge with leaderboard every day:

Day 1 - 0 % improvement

Day 2 - %improvement -> $((d2-d1)/d1) * 100$

Day 3 - %improvement -> $((d3+d2)-(d2+d1))/(d2+d1) * 100$

Day 4 - %improvement -> $((d4+d3)-(d2+d1))/(d2+d1) * 100$

Day 5 - %improvement -> $((d5+d4+d3)-(d3+d2+d1))/(d3+d2+d1) * 100$

Team 1

	Mon	Tue	Wed	Thu	Fri
Num Steps	2000	4000	5000	6000	9000
% Improvement		100%	50%	83.33%	82%

Team 2

	Mon	Tue	Wed	Thu	Fri
Num Steps	2000	5000	4000	6000	9000
% Improvement		150%	29%	43%	73%

Team 3

	Mon	Tue	Wed	Thu	Fri
Num Steps	2000	6000	4000	5000	9000
% Improvement		200%	25%	12.5%	50%

Team 4

	Mon	Tue	Wed	Thu	Fri
Num Steps	2000	9000	6000	5000	4000
% Improvement		350%	36%	0%	-12%