

Down 50%, up 50%, still down 25%.

D8A.ACADEMY/RESOURCES/PERCENT-CHANGE-TRAP

THE CLASSIC

-50% then +50%	← you are at -25%.
-20% needs +25%	to get back to even
-90% needs +900%	drops punch harder

POINTS VS %

10% → 12%	+2 points
same move	+20% relative
say which one	every single time

SMALL BASES

+300%!	from 1 to 4 users
show the counts	next to the %
CTR moves	lie the hardest

AVERAGING

never avg %s	weight by base
Simpson flip	splits can reverse
rates need bases	always carry both

GROWTH

$(\text{end}/\text{start})^{(1/n)}-1$	CAGR
MoM vs YoY	seasonality picks
compounding	10x is ~26% MoM x 2y

GOTCHAS

% of a %	nobody parses it
over 100%	fine for growth
truncated axis	← chart crime, still.

WORTH MEMORIZING

01 The round trip that is not

Percent changes multiply, they do not add. A drop and a rise of the same size never cancel.

start	100	
down 50%	50	-- 100 x 0.5
up 50%	75	-- 50 x 1.5
net move	-25%	-- 0.5 x 1.5 = 0.75
to recover	+100%	-- 50 needs to double

→ Rule of thumb: after a drop of d%, recovery needs d/(1-d), not d. The deeper the hole, the crueler the math.

02 Trap: the headline number

Three ways the same honest data turns into a dishonest sentence.

THE CLAIM	THE REALITY	HONEST VERSION
conversions +300%	1 sale became 4	show counts with rates
churn only +2%	5% to 7% is +40%	give points AND percent
avg conv 25%	one tiny segment at 90%	weight by traffic

→ If a percentage looks amazing, ask for the base. If it looks small, ask for the relative move. Same trick, both directions.