Newsroom Math Crib Sheet
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To convert a fraction into a decimal:

* Divide the top number by the bottom number
* Examples: 5/8 = 0.625 17/64 = 0.265...

To convert a decimal into a percentage:

* Multiply by 100 (or simply move the decimal two places to the RIGHT)
* Examples: 0.658 = 65.8% 1.255 = 125.5%

To turn a percentage into a decimal:

* Divide by 100 (or simply move the decimal two places to the LEFT)
* Examples: 43.7% = 0.437 148.2% = 1.482

To get X% of Y:

* Turn X% into a decimal, then multiply it by Y
* Example: 20% of 90 = 0.20 * 90 = 18 130.5% of 45 = 1.305 * 45 = 58.7...

To compare X and Y using percentages (X is what percent of Y?):

* X is (X/Y * 100) percent of Y
* Example: 5 and 8: 5/8 = .625 = 62.5%, so 5 is 62.5% of 8
* Example: 8 and 5: 8/5 = 1.6 = 160%, so 8 is 160% of 5

To compare X and Y using percentage differences:

* X is ((X/Y -1) * 100) MORE/LESS than Y

* Use MORE THAN if the answer is positive, and LESS THAN if it's negative

* Example: 5 and 8: 5/8 -1 = .625 - 1 = -0.375 = -37.5%, so 5 is 37.5% less than 8

* Example: 8 and 5: 8/5 -1 = 1.6 - 1 = .6 = 60%, so 8 is 60% more than 5

To compare a NEW number with an OLD number using percentage change:

* NEW has increased/decreased ((NEW/OLD -1) * 100) percent since OLD

* Use INCREASED if the answer is positive, and DECREASED if it's negative

* Example: This year's $8 million budget is a 60% increase over last year's $5 million budget.

* Example: This year's $5 million budget is a 37.5% decrease from last year's $8 million budget.

To calculate rates (the number of events per some standard unit):

* Do this to account for different size populations

* RATE = (EVENTS / POPULATION) * ("PER" Unit)

* Example Problem: If there were 320 murders in a population of 1,937,086, what is the murder rate per 100,000?

* First, divide the 320 murders by 1937086 = 0.0001652...

* Now multiply 0.0001652... by 100,000 = 16.5 murders per 100,000 population

To calculate the effect of inflation using the Consumer Price Index (CPI):

$$\text{Price Now} = \text{CPI Now}$$

Price Then CPI Then

* With this formula, all you need is any three of the numbers to calculate the fourth.

* Example: CPI now = 177.7; CPI in 1965 was 30.8; price of gas in 1965 was $0.30 per gallon.

X / 0.30 =177.7 / 30.8

X = (177.7 / 30.8) * 0.30 = 5.75 * 0.30 = $1.73 per gallon

Newsroom statistics:

* Mean (average): Add the numbers, then divide by how many numbers there are

* Median: Sort the numbers in order, then find the middle value

* Sampling error margin: 1/ÖN (example: sample of 625: 1/Ö625 = 1/25 = 0.04 = +/- 4 points)