

Mathematics for Journalists

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What's In The Paper Today?

- Take your front page from today's paper and look for a use of mathematics.
- Examine it and see if you understand it.
- Share your selection with your group.
- Pick the best use of mathematics from your group – what math was used? how was it effective?
- Pick the most confusing? Why?

Percent Change

$$\frac{\textit{End} - \textit{Start}}{\textit{Start}} * 100\%$$

- Means Decrease
- + Means Increase

Problem 1

- If the UA had 10,000 kids five years ago and now has 13,000, what is the increase?

$$\frac{13000 - 10000}{10000} * 100\% = \frac{3000}{10000} * 100\% = 30\%$$

Problem 2

- If revenue grew to \$12.2 billion, a 6-percent increase, then what was the starting revenue?

$$106\% \text{ of Start} = \text{End}$$

$$106\% \text{ of Start} = 12.2 \text{ billion}$$

$$\frac{12.2}{1.06} \approx 11.5$$

Excel

Microsoft Excel - newsmath.xls

File Edit View Insert Format Tools Data Window
TI Tools Help

100% 20

C2 f_x =(B2-A2)/A2

	A	B	C
1	Start	End	Percent Change
2	100	90	-10%
3	25	15	-40%
4			

Sheet1 / Sheet2 / Sheet3

Ready

Estimations

- The crowd was estimated to be approximately 1,237 people

Adjust for Inflation

- 25¢ was worth 77¢ in 1977

Change

- 10 Fold Increase = 1000%:
Going from 77 to 847
- Double = 100%
Going from 77 to 154

One In...

- To get the One In ... statement:
7 of 10,000 make a 2400 on the SAT

$$\frac{10000}{7} = 1428.57$$

making One in 1429.

Growth - Decline

- For growth use this equation:
$$\text{Result} = \text{Start} * (1 + \text{Percent Growth})^x$$
where x is the number of time units after the start time ($=0$)
- For decline use this equation:
$$\text{Result} = \text{Start} * (1 - \text{Percent Decline})^x$$
- Example: 4.3% Growth of population with 172, 263 people in 2003
in 2022 we have $172263(1.043)^{19}=383,349$

Compare - Relate

- Wal-Mart pays \$11,000,000 fine for using undocumented workers
- 4x
- 345 people
- 20 minutes

Question The Mathematics

- “In every single case the cost was more, on average.”

Which Would You Use?

- Percent
- Fraction
- A Multiple
- Raw Numbers

The Percent Trick

- 10% of 25 = 2.5
- 20% of 25 is 10% + 10% so $2.5 + 2.5 = 5$
- 15% of 50 is 10% and half of 10% [5%] so we have $5 + 2.5 = 7.5$
- 11% of 400 is 10% + 1% so we have $40 + 4 = 44$
- 17% of 240 is 10% + 5% + 1% + 1% so we have $24 + 12 + 2.4 + 2.4 = 40.8$

Which Headline?

- It's Rossi by 261; recount is next
- It's Rossi, by 0.0093%

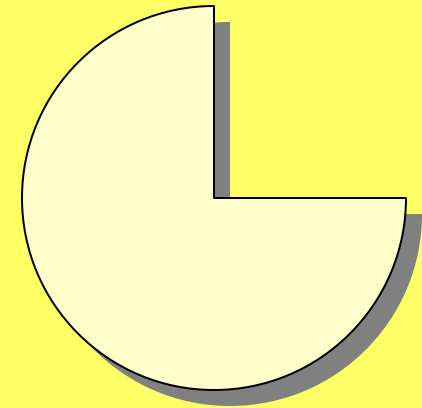
The Seattle Times and Seattle Post Intelligencer

November 18, 2004

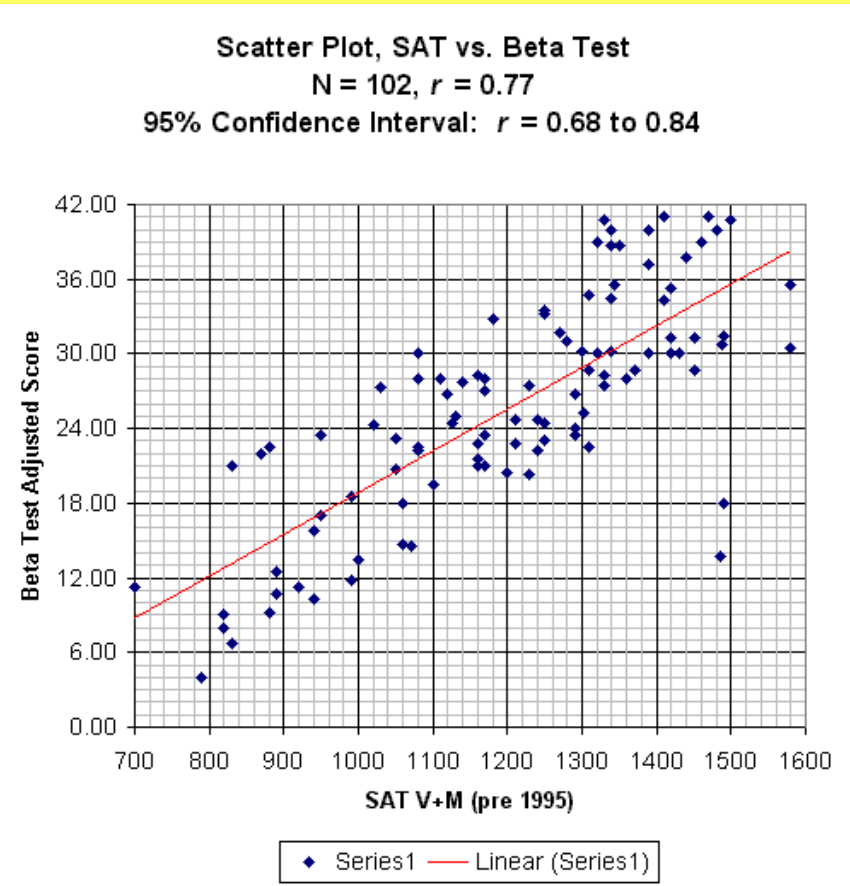
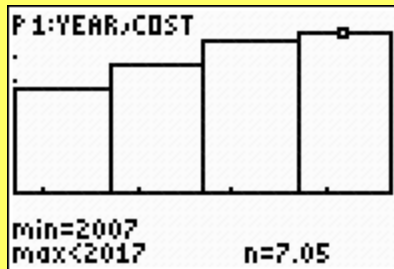
Numeracy

- A Game and Fish survey on a proposed tax indicated that the suggested rate of $1/10$ of a cent was too high. They then conducted a survey with the rate of $1/8$ cent and that rate was considered acceptable!

Graphs



- Pie Chart
- Bar Graph
- Scatter Plot
- Scale?



Changes

- Before the war in Iraq, at the gas station across the street from me, a gallon of gasoline sold for \$1.658 per gallon. When the war began they increased their prices by 10 percent and then once the war ended reduced their price by 10 percent.
- What is the current price of gas is (rounded to the nearest tenth of a cent)?
- \$1.641

Style?

- 0.06 seconds
- [Stat for Journalists](#)

Got A Problem?

Scenario

Facts

The number of STD cases on the UofA@F campus increased from 5 to 50 in one year according to the campus clinic. The staff projects 100 next year.

Task

Write the first two or three sentences for the story on your whiteboard and prop it up before you take a break.

Feel Free To Contact Me

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