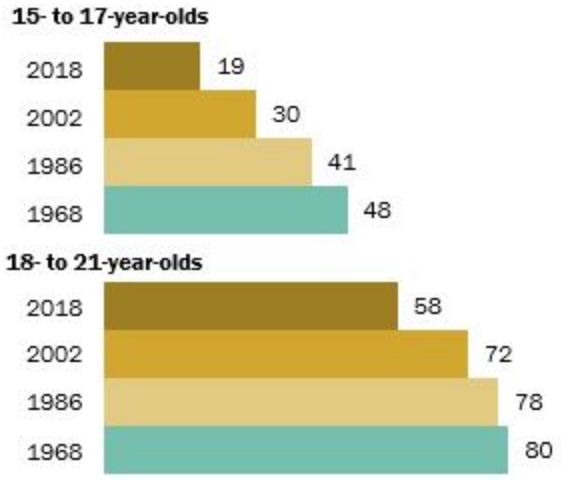
Absolute vs. Relative Measures-Lecture 2

Learning Objectives:

- Distinguish between absolute and relative measures
- Calculate percent change and absolute change

Post-Millennials less likely to work than older generations when they were young

% of civilians who were employed during the prior year



Source: Pew Research Center analysis of 1968, 1986, 2002 and 2018 Current Population Survey Annual Social and Economic Supplement (IPUMS).
"Early Benchmarks Show Post-Millennials on Track to Be Most Diverse, Best-Educated Generation Yet"

PEW RESEARCH CENTER

PollEverywhere L2-Q1

Describe the number 48 in the chart.

A. Forty-eight civilians aged 15-17 years old were employed in 1968.

B. Forty-eight percent of civilians aged 15-17 years old were employed in 1968.

C. Forty-eight percent of civilians were employed in 1968.

D. Forty-eight percent of millenials were employed in 1968.

PollEverywhere L2-Q2

Choose the true statement(s) according to the graph.

A. The percent of civilians age 18-21 years old employed in 1968 is higher than the percent employed in 2018.

B. The number of civilians age 18-21 years old employed in 1968 is higher than the number employed in 2018.

C. More 18-21 year olds are employed in each given year than 15-17 year olds.

D. The percent of 18-21 year olds employed in each year given is higher than the percent of 15-17 year olds.

Types of CHANGE:

ABSOLUTE:

RELATIVE:

PollEverywhere L2-Q3

A store has a big sale - all items are 50% off. A week later the store has additional 50% off on the already reduced prices. Which of the following statements are true?

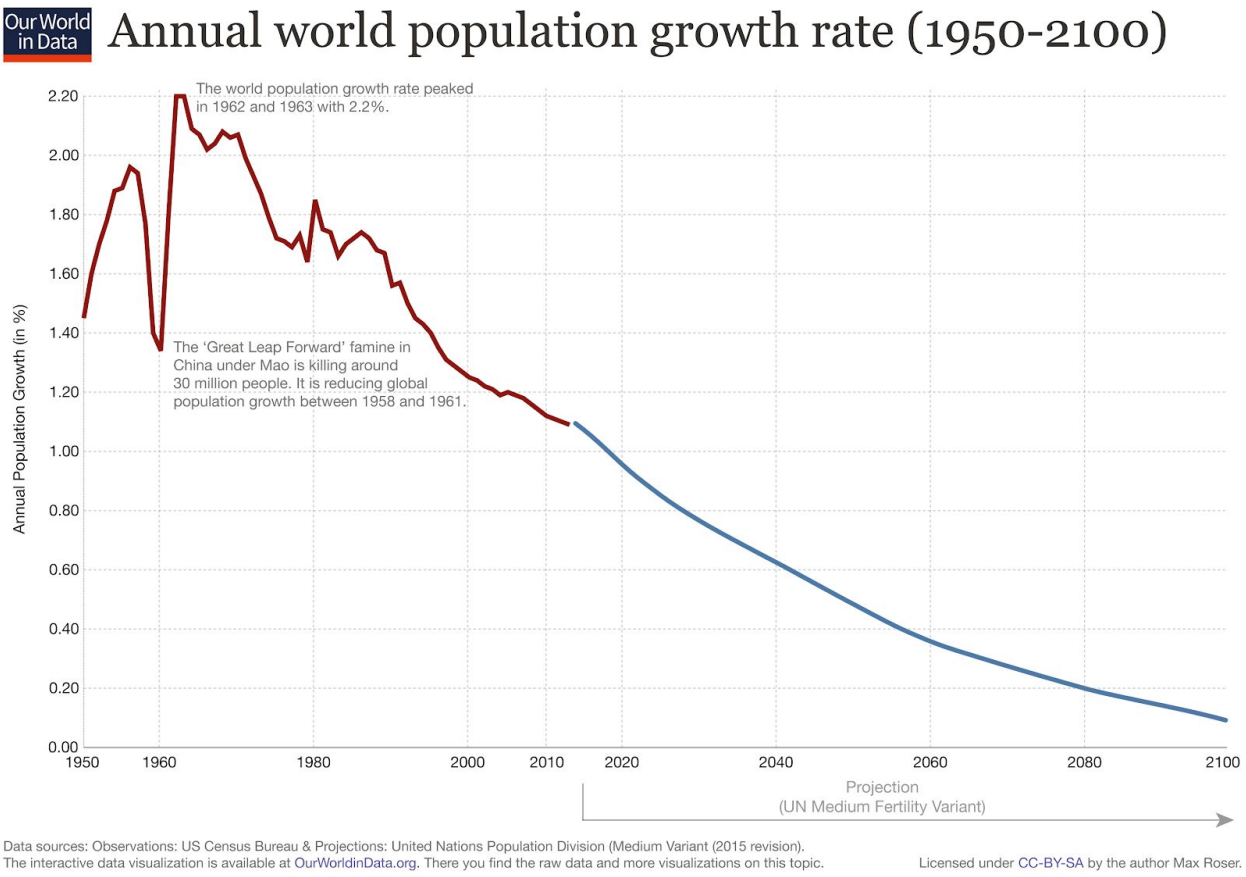
A. All items in the store are free.

B. We cannot determine the discount rate of a given item, as we need to know the original price of the item.

C. We cannot determine the sale price of a given item, unless we know the original price of the item.

D. All items are 75% off.

E. All cost items are 25% of their original price.



PollEverywhere L2-Q4

What can we say about the world population in 2010?

A. The world population is decreasing in 2010.

B. The world population is increasing 2010, but at a slower rate than in previous years.

C. The graph does not give enough information to determine if the world population increasing or decreasing in 2010.

Example 1:

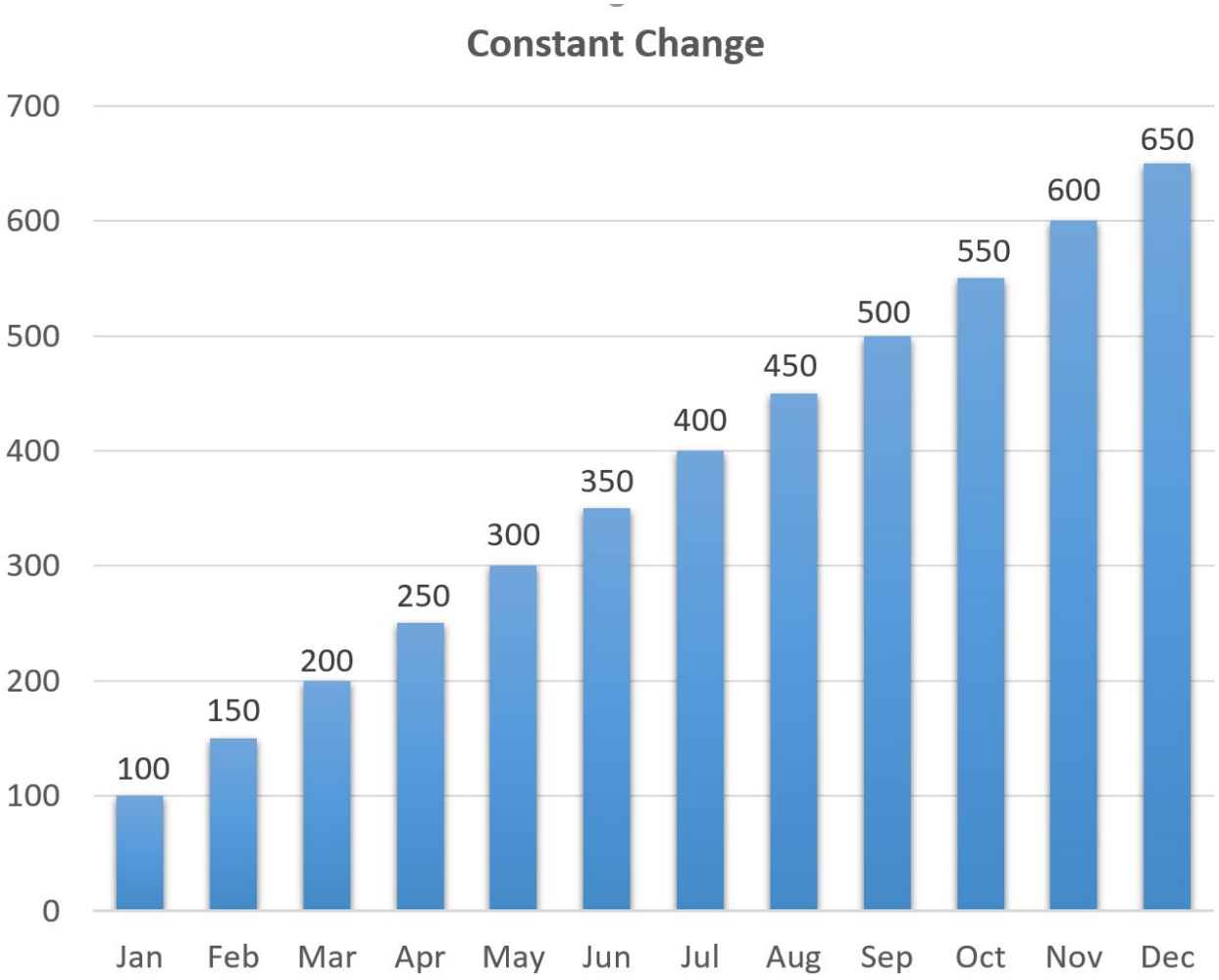
Terry makes $40,000 and gets a promotion, which includes a $5,000 raise. What is the percent increase in her salary?

Example 2:

A backpack usually costs $70, but is on sale for $30. What is the percent change in the price?

Example 3:
Ana makes $45,000 and gets a 2.5% raise. What is her new salary?

Use the graph below to answer Example 4 and 5 questions.



Example 4: Calculate the percent change in the total amount in Neri's savings account, based on the chart, from January to February.

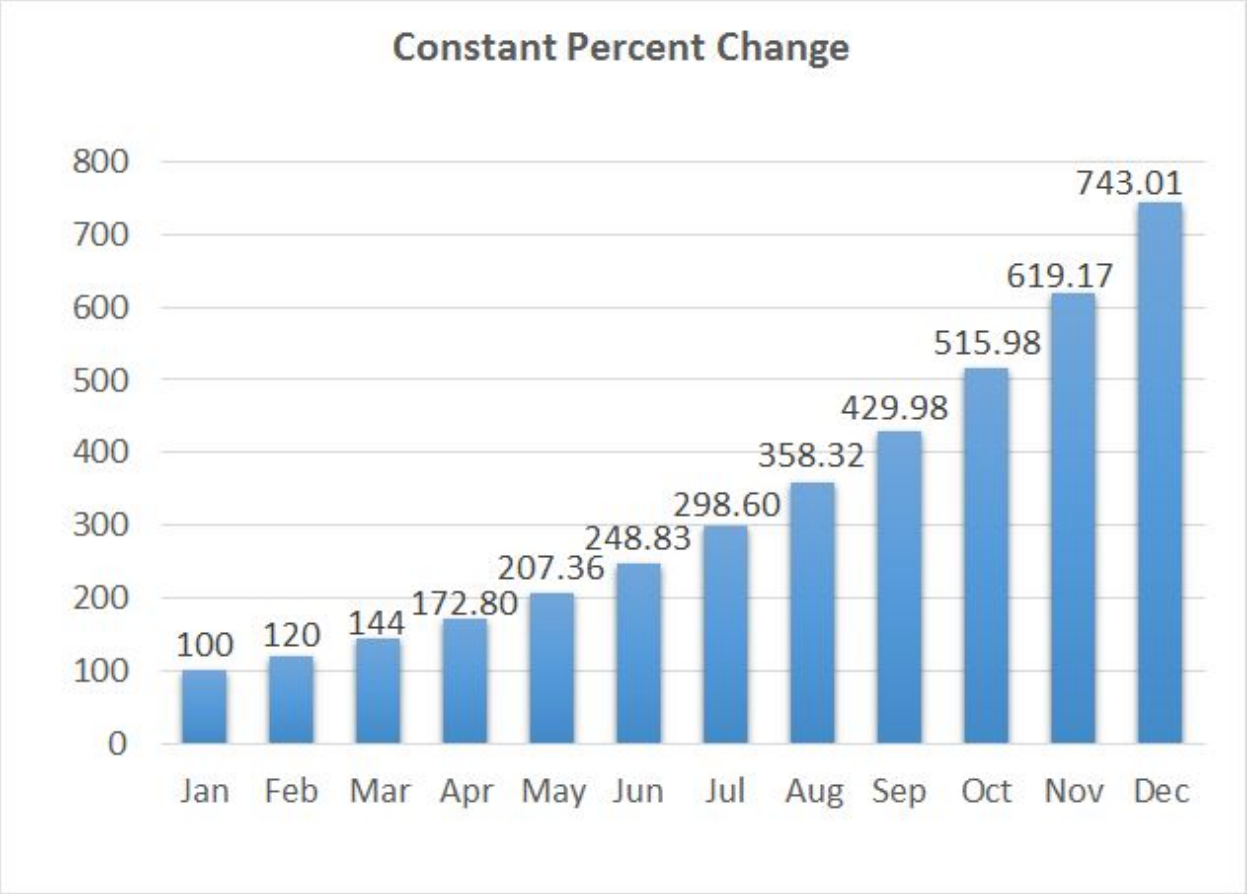
Example 5: Calculate the percent change in the total amount in Neri's savings account, based on the chart, from November to December.

PollEverywhere L2-Q4

Based on the graph above, which of the following statements are true?

A. Each month her savings increases by a constant amount.
B. Each month her savings increases by a constant percentage.
C. The contribution to her savings increases each month.
D. The percent change of her savings decreases each month.

Use the graph below to answer Example 6 and 7 questions.



Example 6: Calculate the percent change in the total amount in Xander's savings account, based on the chart, from February to March.

Example 7: Calculate the percent change in the total amount in Xander's savings account, based on the chart, from June to July.

PollEverywhere L2-Q6

Which of the following statements are true?

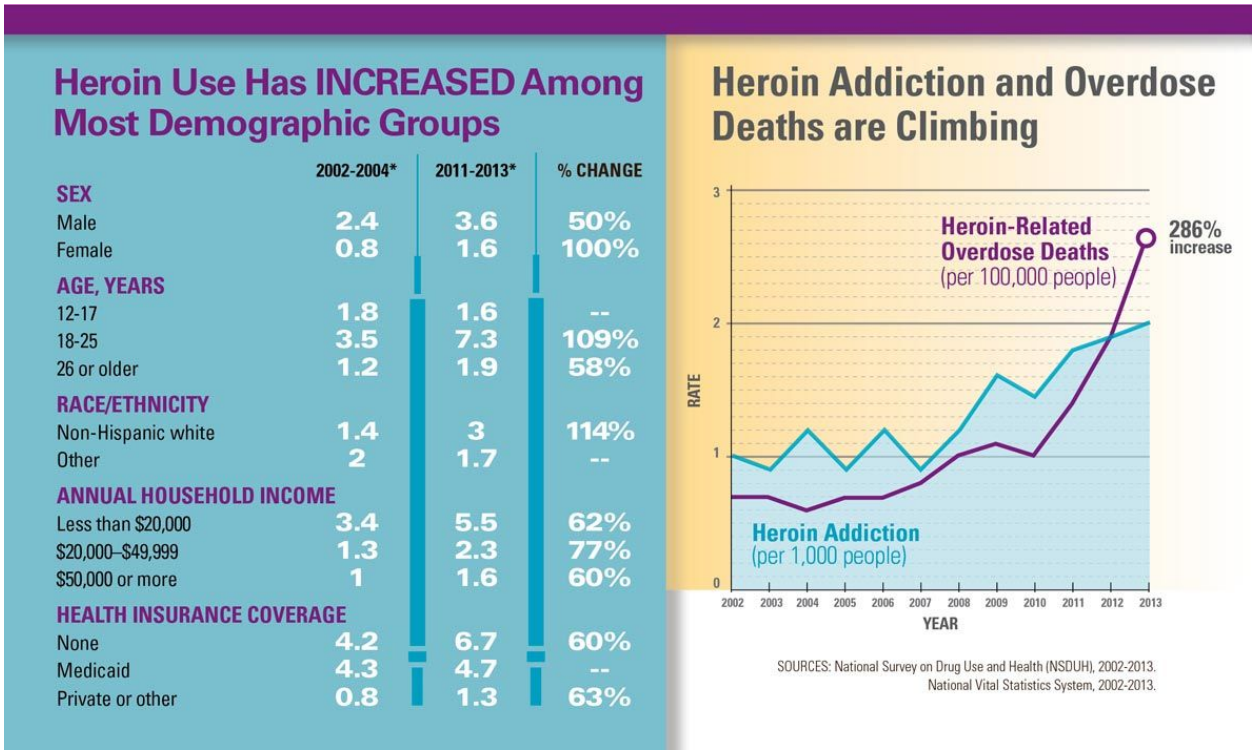
A. Each month his savings increases by a constant amount.

B. Each month his savings increases by a constant percentage.

C. The contribution to his savings increases each month.

D. The percent change of his savings increases each month.

Show the calculations done in the following blanks using the chart below



Heroin Use Has INCREASED Among Most Demographic Groups

	2002-2004*	2011-2013*	% CHANGE
SEX			
Male	2.4	3.6	50%
Female	0.8	1.6	100%
AGE, YEARS			
12-17	1.8	1.6	--
18-25	3.5	7.3	109%
26 or older	1.2	1.9	58%
RACE/ETHNICITY			
Non-Hispanic white	1.4	3	114%
Other	2	1.7	--
ANNUAL HOUSEHOLD INCOME			
Less than $20,000	3.4	5.5	62%
$20,000–$49,999	1.3	2.3	77%
$50,000 or more	1	1.6	60%
HEALTH INSURANCE COVERAGE			
None	4.2	6.7	60%
Medicaid	4.3	4.7	--
Private or other	0.8	1.3	63%

Heroin Addiction and Overdose Deaths are Climbing

SOURCES: National Survey on Drug Use and Health (NSDUH), 2002-2013. National Vital Statistics System, 2002-2013.

	2002–2004*	2011–2013*	Percent Change
Sex			
Male	2.4	3.6	
Female	0.8		100%
Age, Years			
12–17	1.8	1.6	
18–25		7.3	109%
26 or older	1.2	1.9	58%