Sexagesimal System

The Babylonian system of mathematics was sexagesimal (base-60) numeral system. From this we derive the modern day usage of 60 seconds in a minute, 60 minutes in an hour, and 360 degrees in a circle. The Babylonians were able to make great advances in mathematics for two reasons. Firstly, the number 60 is a Highly composite number, having divisors 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30 and 60, facilitating calculations with fractions. Additionally, unlike the Egyptians and Romans, the Babylonians and Indians had a true place-value system, where digits written in the left column represented larger values (much as in our base ten system: 734 = 7×100 + 3×10 + 4×1). The Sumerians and Babylonians were pioneers in this respect.

A Culture of Mathematics

University of Pennsylvania Museum

Thirteen cuneiform clay tablets of ancient Mesopotamia, dating from 1900 to 1700 B.C., are on display until Dec. 17 at the Institute for the Study of the Ancient World, part of New York University. Many are exercises of students learning to be scribes, who were mastering mathematics based on texts in Sumerian, a language that even at the time was long since dead. The items are drawn from archaeological collections of Columbia, Yale and the University of Pennsylvania and include two celebrated tablets, known as YBC 7289 and Plimpton 322, that have played central roles in the reconstruction of Babylonian math.

Concept of Fractions

- Fractions are fractured numbers, or parts of a whole:
- **Numerator**
- **Denominator**

- Multiply   TopXTop
  - **And**   **Bottom X Bottom**
- Divide-Memorize the steps
  - 1. Invert the divisor
  - 2. Multiply
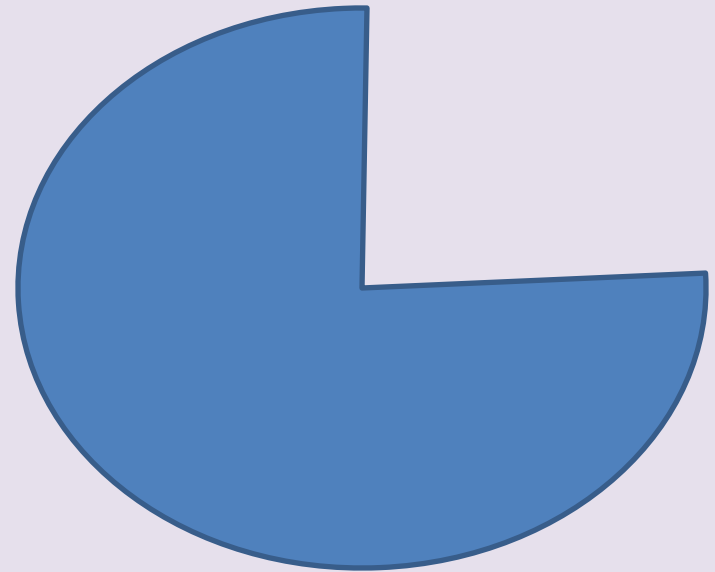
Conversions
Fraction To Decimal

- Use a calculator

- To convert from a fraction to a decimal, simply divide, using the fraction "line" as divided by.

- As in ¼ = 1 divided by 4

Conversions Decimals to Fractions

- To convert from a Decimal to a Fraction

- Remember,

- **Say it, no Point!**

- .4= four tenths=4/10

- .06 = six hundredths =6/100

- .007= seven thousandths=7/1000

- 1.05= One and five hundredths=1 and 5/100

Conversions
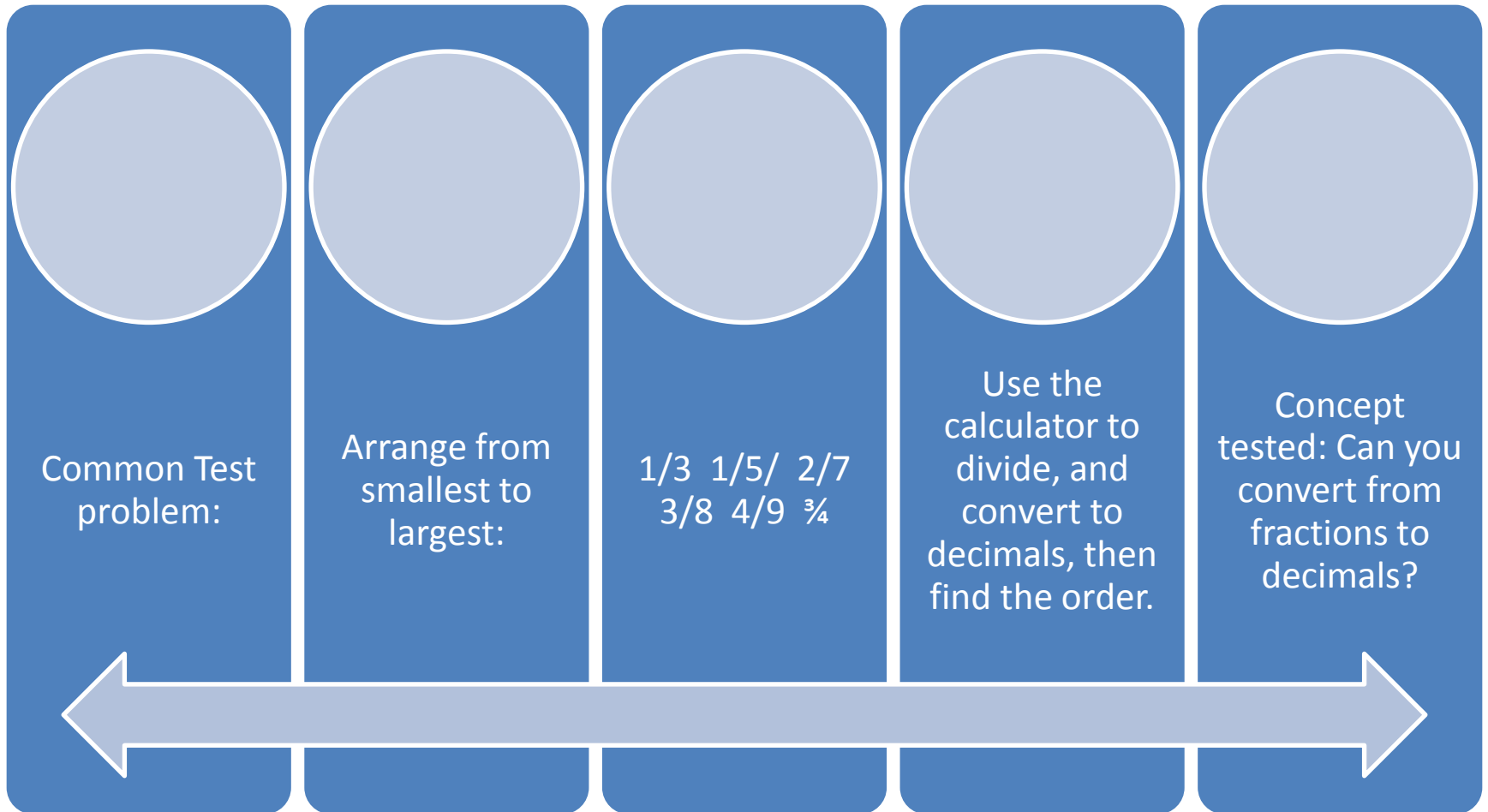## Decimal to Percent
And Percent to Decimal

- To convert from a Decimal to a Percent
- Use this diagram: Alphabetical order

D<2>P

Always move two places, Move 2 places to the right if going from Decimal to Percent

Move 2 places to the left if going from Percent to Decimal

The " biggest" fraction?

Common Test problem:

Arrange from smallest to largest:

1/3 1/5/ 2/7 3/8 4/9 ¾

Use the calculator to divide, and convert to decimals, then find the order.

Concept tested: Can you convert from fractions to decimals?

Any Number Over Itself Is 1

- 1/1=1

- A/A=1

- 600/600=1

- $\dfrac{00.5001391/2}{00.5001391/2}$ =1

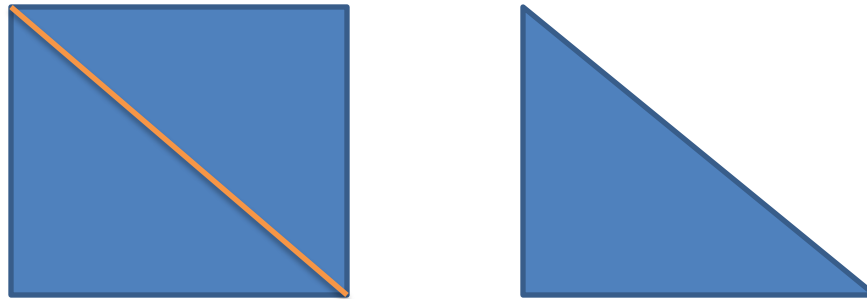$$\dfrac{abX(ab)}{abX(ab)} = 1$$

Coordinate Plane
Positive Negative and Undefined Slope
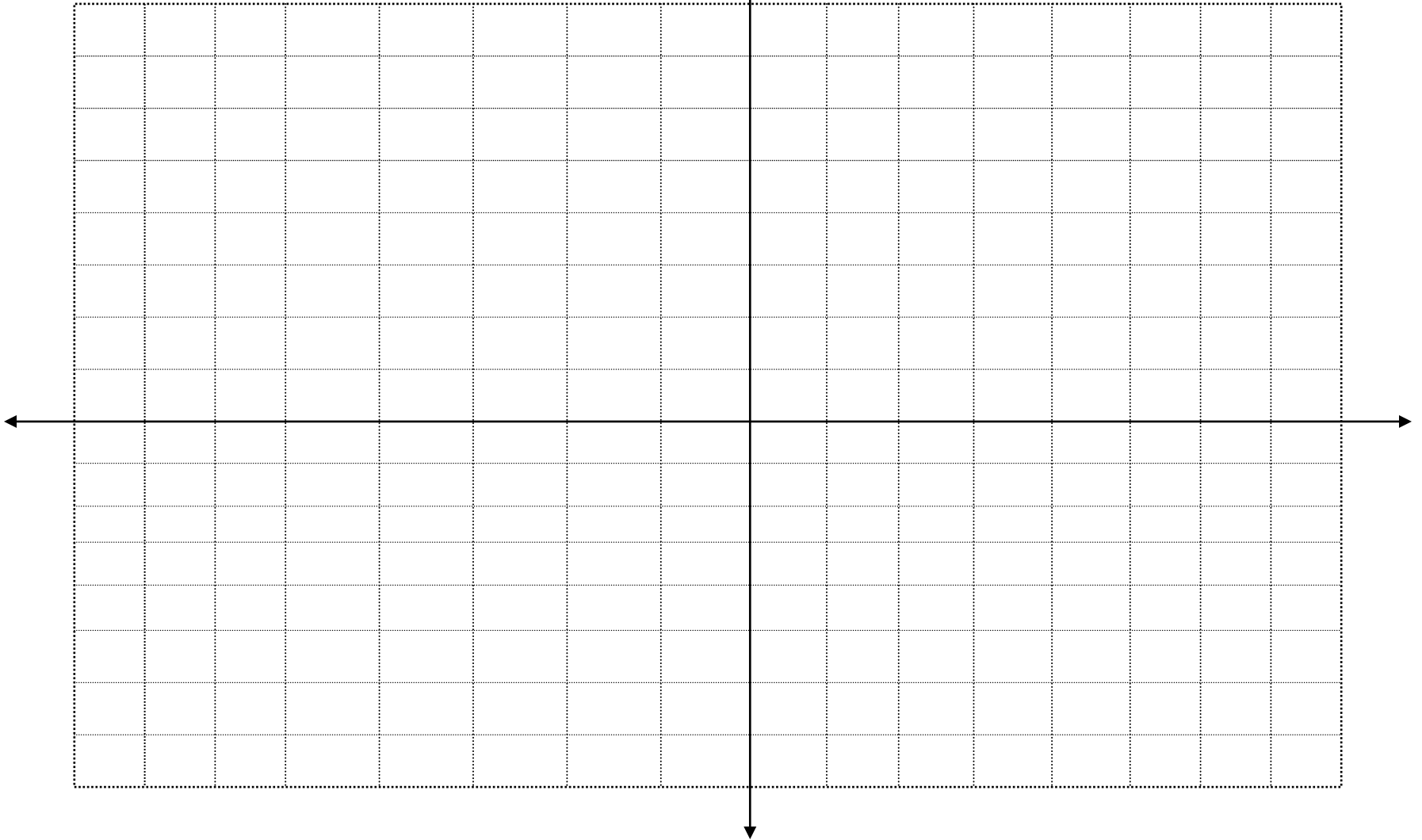
Area of a Triangle

- First , find the area of a square:
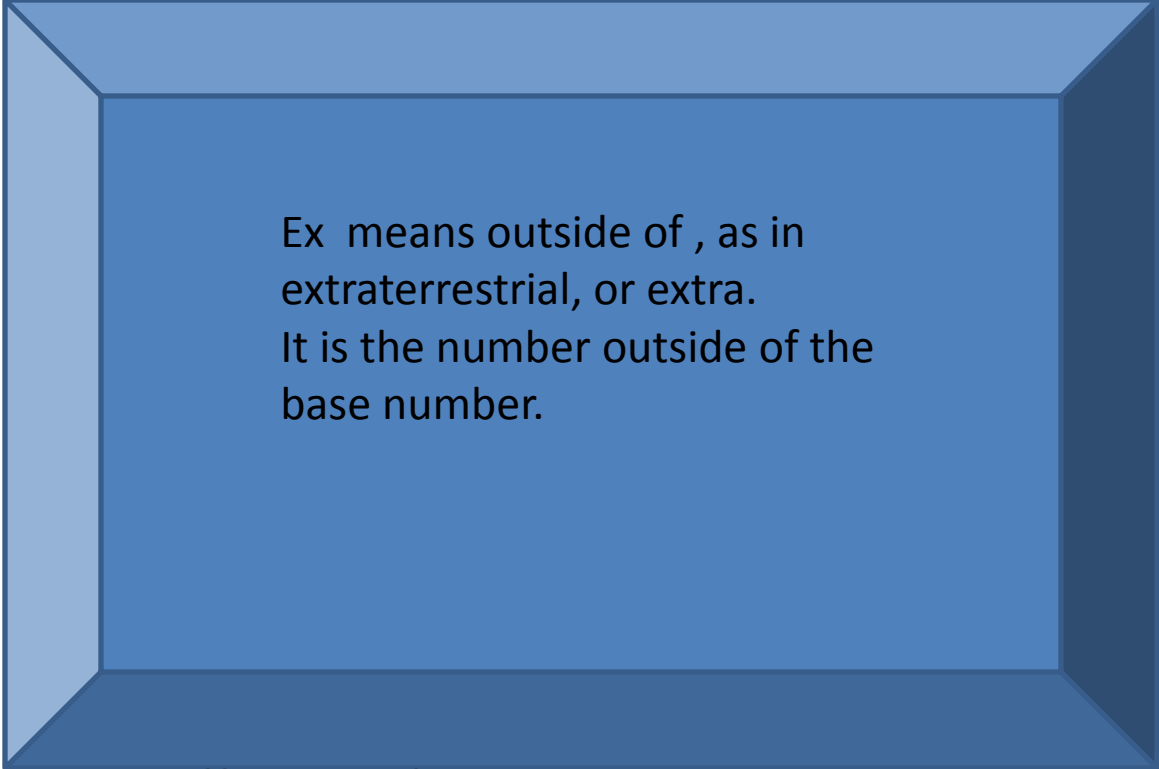- A=LXW

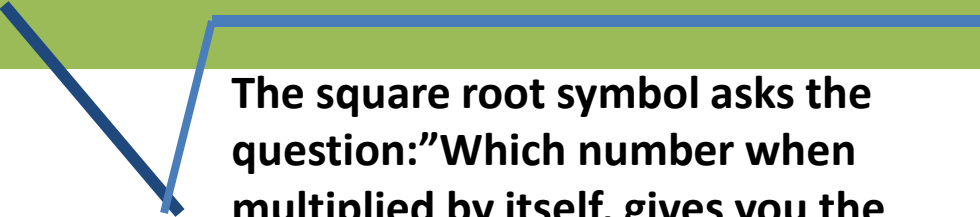- Then, find the area of the 2 triangles within.
- A= ½ LXW

Exponents

Ex means outside of , as in extraterrestrial, or extra.
It is the number outside of the base number.

The exponent tells you how many times to write down the number and multiply it by itself.

$$3^2 =$$

3x3

Square Roots

The square root symbol asks the question:"Which number when multiplied by itself, gives you the number in the box?"

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Archimedes

The ratio of the circumference to the diameter of a circle was a subject of ancient Babylonian interest. Archimedes discovered in 200 BC that the circumference of a circle was roughly 3 times as long as the diameter.   Pi=3.14 or 22/7

Pi and Circles
Circumference
Area

Slope of the Line

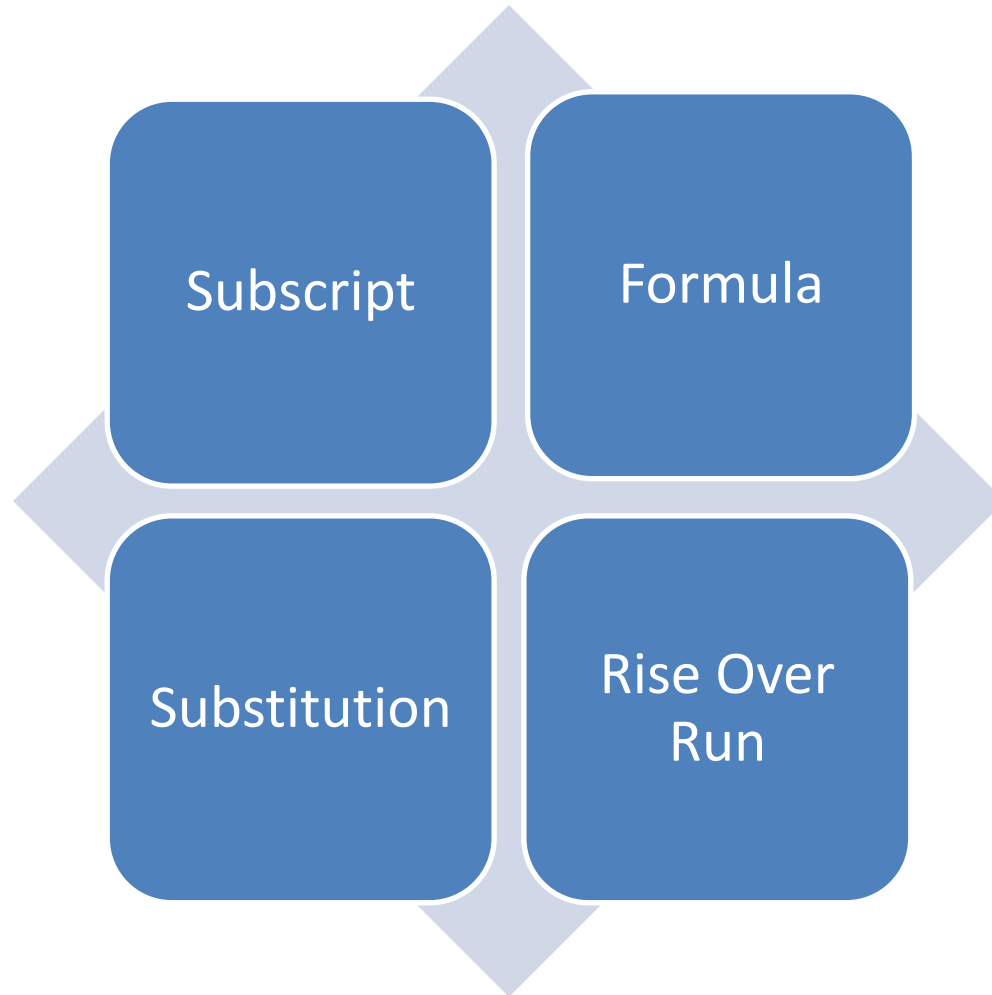$$\frac{\underline{\text{Change in y}}}{\text{Change in X}}$$

Subscript	Formula
Substitution	Rise Over Run

Simple Interest Formula

I=PRT (Time in Years)
Personal Finance Education http://www.smartaboutmoney.org/

House-$500,000. I=PRT

I=$500,000. X .06 X 30

Boat-$120,000.

I=$120,000. X .05X 15

Confidence

Building Teaching Skills

Please circle the number that best describes your confidence as an instructor to do the following:

Your confidence to:	Not confident	A little confident	Somewhat confident	Confident	Very confident				
How do you change from decimals to percents?						✏	✖	⬆	⬇
how do you convert a fraction to a decimal?						✏	✖	⬆	⬇
How do you convert a decimal to a fraction?						✏	✖	⬆	⬇
Any number over itself is equal to what?						✏	✖	⬆	⬇
A square root symbol asks the questions: What number when multiplied by itself equals the number in the box?						✏	✖	⬆	⬇
How do you calculate square roots?						✏	✖	⬆	⬇
how do you divide when there are square roots?						✏	✖	⬆	⬇
How do you Convert from a fraction to a percent?						✏	✖	⬆	⬇