

Ms. Wong's "Year on a Page" Study Guide

Number Sense:

Prime: Numbers with only two factors, one and itself: 2, 3, 5, 7, 11, 13, 17...

Composite: Numbers with more than 2 factors: 4, 6, 8, 9, 10...

Least Common Multiple: (Often used to find common denominator!) The smallest possible integer that is divisible by both numbers: LCM (4, 6)=12

Greatest Common Factor or Divisor: Biggest factor that numbers share: GFC (28, 14)=14

Exponents: Used to show repeated multiplication: $3^4 = 3 \times 3 \times 3 \times 3 = 81$

Order of Operations: The order in which you "solve a problem"

1. **Parentheses:** Do everything in parentheses FIRST
2. **Exponents:** Do exponents SECOND
3. **Multiply & Divide:** Left to right THIRD
4. **Add & Subtract:** Left to right FOURTH

$$\begin{aligned} & (6+3)^2 - 7 \cdot 4 + 6 \\ & \underline{9^2} - 7 \cdot 4 + 6 \\ & 81 - \underline{7 \cdot 4} + 6 \\ & \underline{81 - 28 + 6} = 59 \end{aligned}$$

Integers:

Adding & Subtracting: Use a number line!

$$-4 + (-2) = -6$$

Add negative 2

Multiplying & Dividing:

$$\begin{array}{ll} + \cdot + = + & + \div + = + \\ + \cdot - = - & + \div - = - \\ - \cdot + = - & - \div + = - \\ - \cdot - = + & - \div - = + \end{array}$$

Fractions:

Adding:

1. Find a common denominator
2. Rewrite fractions with new common denominator
3. Add numerators, keep denominators the same
4. Simplify

$$\frac{2 \times 4}{3 \times 4} + \frac{1 \times 3}{4 \times 3} = \frac{8}{12} + \frac{3}{12} = \boxed{\frac{11}{12}}$$

Subtracting:

1. Find a common denominator
2. Rewrite fractions with new common denominator
3. Add numerators, keep denominators the same
4. Simplify

*With mixed #'s, subtract whole #'s first!
You may need to borrow!

$$2\frac{1}{2} - 1\frac{1}{3} = 2\frac{3}{6} - 1\frac{2}{6} = \boxed{1\frac{1}{6}}$$

Multiplying:

1. Multiply numerators
2. Multiply denominators
3. Simplify

$$\frac{3}{4} \cdot \frac{1}{3} = \frac{3 \div 3}{12 \div 3} = \boxed{\frac{1}{4}}$$

Dividing:

"Leave me alone, change my sign, flip me over!"

$$\frac{1}{2} \div \frac{3}{4} = \frac{1}{2} \times \frac{4}{3} = \frac{4 \div 2}{6 \div 2} = \boxed{\frac{2}{3}}$$

Decimals:

Adding/Subtracting: Line up decimal point!

$$\begin{array}{r} 1.37 \\ + 2.10 \\ \hline 3.47 \end{array}$$

Multiply: Line up along the right:

$$\begin{array}{r} 1.25 \\ \times 0.3 \\ \hline \end{array}$$

← 3 after the decimal so move over 3

Divide: Move decimal point to get a whole number

$$1.2 \overline{)14.73} = 12 \overline{)147.3}$$