

4-1 Divisibility (Page 152)

Divisibility Rules			
#	The number is divisible by....	Divisible	Not Divisible
2	If the last digit is even	3,978	4,975
3	If the sum of the digits is divisible by three	315	139
4	If the last two digits form a number divisible by four	8,512	7,518
5	If the last digit is 0 or 5	14,975	10,978
6	If the number is divisible by both 2 & 3	48	20
9	If the sum of the digits is divisible by 9	711	93
10	If the last digit is 0	15,990	10,536

A number is **DIVISIBLE** by another number if the quotient is a whole number with no remainder.

Ex. # 1) Is 610 divisible by 2, 3, 4, 5?

Ex # 2) Is 387 divisible by 6, 9, 10?

Answer _____

Answer _____

Ex # 3) Is 432 divisible by 2, 3, 4, 6, 9?

Answer _____

Prime and Composite Numbers

Prime Number = a number that is only divisible by 1 and itself. It has two factors (1 and itself)

Ex #1) 3 is a prime number because the only two numbers that can be multiplied together to get 3 is 1 and itself.

Ex #2) 11 is also a prime number because it is divisible by 1 and itself.

Composite Number = a number that is divisible by more than 2 numbers. It has more than 2 factors

Ex #1) 12 is a composite number because 1, 2, 3, 4, 6, 12 are all factors and can go into 12

Ex #2) 4 is a composite number because 1, 2, 4 are all factors.

Ex# 1) 45 Prime or composite

Ex#2) 13 prime or composite

Ex#3) 19 prime or composite

4-2 Factors and Prime Factorization (Page 156)**List all of the factors of a number**

Start with 1 and itself and work your way inside. (1, _____, 18)

Ex #1) 12

Ex #2) 13

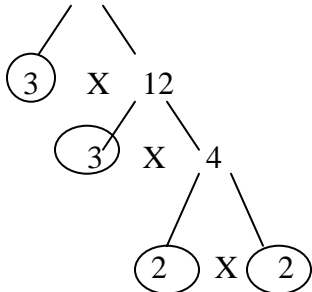
Ex# 3) 36

Ex #4)

Prime Factorization = a number written as the product of prime numbers.

The prime factorization of $36 = 2 \times 3 \times 2 \times 3$ or $2^2 \times 3^2$
How do we find this? Factor tree

Ex #1) 36



36

Ex #2) 12

Ex # 3) 19

Ex#4) 54

Answer = $3^2 \times 2^2$

Date _____

4-3 Greatest Common Factor (Page 160)

Greatest Common Factor = the largest common factor between 2 or more numbers

- 1) Set up the numbers vertically
- 2) List all of the factors
- 3) Find the all of the common factors and select the greatest one.

Ex #1) Find the GCF of 16 and 24

16
24

Ex #2) Find the GCF of 12 and 24

12
24

Ex #3) Find the GCF of 18 and 60

18
60

Date _____

4-4 Decimals and Fractions (Page 167)

Writing decimals as fractions or mixed numbers.

Ex #1) 0.23 Identify the place value of the digit the farthest to the right, that becomes your denominator

Say twenty-three hundredths and it becomes = $\frac{23}{100}$

Ex# 2) 1.7 Identify the place value of the digit the farthest to the right, that becomes your denominator

Say one and seven tenths = $1\frac{7}{10}$

Ex # 3) 0.15

Ex #4) 1.25

Ex #5) 0.43

Writing fractions as decimals.

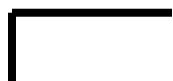
Terminating decimal = will end and work out

Repeating decimal = 1 or more digits continue or never end

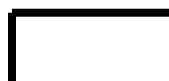
Ex # 1) $\frac{3}{4}$ Divide 3 by 4. **REMEMBER TOP NUMBER INSIDE AND BOTTOM NUMBER OUTSIDE!**



Ex #2) $5\frac{2}{3}$



Ex #3) $\frac{1}{8}$



When converting a mixed number to a decimal – the whole number automatically becomes your whole number in the decimal.

<u>Common Fractions and Equivalent Decimals</u>								
$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{2}{5}$	$\frac{1}{2}$	$\frac{3}{5}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{4}{5}$
0.2	0.25	0.3	0.4	0.5	0.6	0.6	0.75	0.8

Comparing and ordering fractions and decimals

Ex # 1) 0.5, $\frac{1}{5}$, 0.37

First convert them all to the form you are most comfortable with and put in order that they give you.

0.5 - 0.20 – 0.37

Now you can figure out that the appropriate order is = 0.20 – 0.37 – 0.5

Ex # 2) $\frac{2}{3}$ - 0.78 - 0.21

Ex #3) 0.52- $\frac{1}{9}$ - 0.3

4-5 Equivalent Fractions (Page 172)

Finding equivalent Fractions:

Equivalent fractions = fractions that represent the same value $\frac{1}{2} = \frac{2}{4}$

How to find Equivalent fractions:

1. Multiply the numerator and denominator by the same number
2. Divide the numerator and denominator by the same number

Ex # 1) $\frac{1}{2} \begin{matrix} \times 4 \\ \times 4 \end{matrix} = \frac{4}{8}$

Ex # 2) $\frac{5}{6} \begin{matrix} \times 2 \\ \times 2 \end{matrix} = \frac{10}{12}$

Ex # 3) $\frac{4}{7} =$

Find the missing number: (whatever you did to one – be sure to do to the other)

Ex # 1) $\frac{1}{2} = \frac{?}{10}$

Ex # 2) $\frac{70}{100} = \frac{7}{?}$

Ex # 3) $\frac{3}{4} = \frac{?}{16}$

Ex # 4) $\frac{5}{9} = \frac{10}{?}$

Write each fraction in lowest terms:

1. Divide the numerator and denominator by the GCF of both numbers
2. When the GCF of both numerator and denominator is 1, then the fraction is in lowest terms.
3. Also, if the numbers are neighbors – the fraction is in lowest terms.
4. If the numerator is 1 – the fraction is in lowest terms.

Ex # 1) $\frac{18}{24}$

Ex # 2) $\frac{12}{14}$

Ex # 3) $\frac{3}{9}$

Ex # 4) $\frac{13}{39}$

4-6 Comparing and Ordering Fractions (Page 178)

Comparing Fractions: When comparing fractions with like denominators, find the bigger numerator. If the fractions have different denominators you can cross multiply or find the missing number.

Ex #1) $\frac{7}{10} \bigcirc \frac{3}{10}$

Ex # 2) $\frac{1}{8} \bigcirc \frac{5}{8}$

Ex #3) $\frac{1}{2} \bigcirc \frac{2}{3}$

Ex #4) $\frac{7}{8} \bigcirc \frac{5}{6}$

Ordering Fractions: Convert all fractions to have like denominators and then find the biggest numerator.

Ex #1) $\frac{3}{7} - \frac{3}{4} - \frac{1}{4}$ (order from least to greatest) Find a common denominator of all the denominators

Each denominator goes into 28 $\frac{3}{7} = \frac{?}{28}$ $\frac{3}{4} = \frac{?}{28}$ $\frac{1}{4} = \frac{?}{28}$

Ex # 2) $\frac{1}{4} - \frac{2}{3} - \frac{3}{8}$ (order from least to greatest)

Date _____

4-7 Mixed Numbers and Improper Fractions (Page 182)

Improper fraction = a fraction in which the numerator is greater than or equal to the denominator ($\frac{5}{4}$)

Mixed Number = a whole number with a fraction ($5\frac{3}{7}$)

Converting an improper fraction to a mixed number = divide – top number inside and bottom number outside

Quotient becomes whole number – remainder becomes numerator – denominator stays the same

Ex # 1) $\frac{7}{3}$

$$\begin{array}{r} 2 \\ \overline{) 7} \\ \underline{- 6} \\ 1 \end{array}$$

← Whole number
 ← Numerator

= $2\frac{1}{3}$

Denominator → 3

Ex # 2) $\frac{5}{4}$

Ex # 3) $\frac{9}{7}$

Ex #4) $\frac{12}{5}$

Converting a Mixed number to an improper fraction = multiply + add - Multiply denominator by whole number – add numerator to product – that becomes new numerator – denominator stays the same

Ex # 1) $5 \frac{1}{2}$

Add product to numerator

Multiply numerator by whole number

Sum becomes new numerator

$$5 \frac{1}{2} = \frac{11}{2}$$

Denominator stays the same

Ex # 2) $4 \frac{2}{3}$

Ex # 3) $6 \frac{1}{9}$

Ex # 4) $7 \frac{6}{7}$

Date _____

4-8 Adding and Subtracting with Like Denominators (Page 188)

When adding or subtracting fractions be sure to:

1. Check the operation sign
2. Check the denominators
3. Line up vertically
4. Add numerators
5. Bring the denominator down (it stays the same)
6. Simplify or reduced to lowest terms
7. Never leave your answer as an improper fraction

Ex # 1) $\frac{1}{8} + \frac{1}{8} = \frac{2}{8} = \frac{1}{4}$

$$\begin{array}{r} \frac{1}{8} \\ + \frac{1}{8} \\ \hline \end{array}$$

Ex # 2) $3 \frac{7}{12} - 1 \frac{1}{12} = 3 \frac{7}{12}$

$$\begin{array}{r} 3 \frac{7}{12} \\ - 1 \frac{1}{12} \\ \hline 2 \frac{6}{12} \\ = 2 \frac{1}{2} \end{array}$$

Ex # 3) Evaluate the expression $X = \frac{3}{8}$ for $\frac{5}{8} - X$

Ex # 4) $2 - \frac{3}{5}$

4-9 Multiplying Fractions by Whole Numbers (Page 192)**When multiplying fractions by whole numbers be sure to:**

1. Make the whole number a fraction – put it over 1
2. Multiply numerator times numerator
3. Multiply denominator times denominator
4. Simply or reduced to lowest terms
5. Never leave your answer as an improper fraction

$$\text{Ex \# 1) } 5 \times \frac{1}{8} = \frac{5}{1} \times \frac{1}{8} = \frac{5}{8}$$

$$\text{Ex \# 2) } 3 \times \frac{1}{9} =$$

$$\text{Ex \#3) } 4 \times \frac{7}{8}$$