

Braintree Public Schools

Grade 5 MCAS Mathematics Reference Sheet

Place value chart

Millions
Hundred thousands
Ten thousands
Thousands
Hundreds
Tens
Ones
•
Tenths
Hundredths
Thousandths
Ten-thousandths

Order of Operations - PEMDAS

- Solve number sentence inside grouping symbols, like parentheses
- Find the value of all powers
- Multiply and divide in order from left to right
- Add and subtract in order from left to right

DIVISIBILITY RULES

A number is able to be divided by

2	If the last digit is even.
3	If the sum of the digits can be divided by 3.
5	If the last digit is 0 or 5.
10	If the last digit is 0.

Measurements

3 feet = 1 yard

5280 feet = 1 mile

60 seconds = 1 minute

60 minutes = 1 hour

180 degrees = sum of angles in a triangle

360 degrees = sum of angles in a rectangle

Solving equations with Variables

- To undo Addition you Subtract.
- To undo Subtraction you Add.
- To undo Multiplication you Divide.
- To undo Division you Multiply.

Prime Factorization

- Make a factor tree
- Circle prime numbers

Word Problem Knowledge

ADD	SUBTRACT	MULTIPLY	DIVIDE
Sum, total, all together	Difference, minus, many more	Product, times, double	Quotient, per, average, each

Comparing and Ordering Numbers

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Equal to each other

$$\underline{\hspace{2cm}} < \underline{\hspace{2cm}}$$

Smaller number < Larger number

$$\underline{\hspace{2cm}} > \underline{\hspace{2cm}}$$

Larger Number > Smaller Number

PERCENTS

Percent to Fractions

- ◆ Place number over 100.
- ◆ Reduce if possible.

Percent to Decimals

- ◆ Trade percent sign for decimal.
- ◆ Move two places to the left.

Decimals to Percents

- ◆ Move decimal two places to the right.
- ◆ Add percent sign.

Formulas

• Area

Square.....Area = side x side
Area = length x width

Rectangle.....Area = base x height
Area = length x width

Triangle.....Area = $1/2$ (base x height)

◆ Perimeter

Square.....Perimeter = 4 x side

Rectangle.....Perimeter = (2 x base) + (2 x height)
Perimeter = (2 x length) + (2 x width)

Triangle.... Perimeter = side + side + side

◆ Volume

Rectangular Prism.....Volume = length x width x height

Graphing Coordinates

- ◆ Use x axis first
- ◆ Use y axis next
- ◆ Plot point

Fractions

Adding Fractions

- Need a common denominator
- What I do to the bottom, I do to the top
- Add fractions first
- Add whole numbers
- Simplify the answer

Subtracting Fractions

- Need a common denominator
- What I do to the bottom, I do to the top
- When needed, borrow or rename your whole number
- Subtract fractions first
- Subtract whole numbers
- Simplify the answer

Multiplying Fractions

- Whole numbers go over 1
- Mixed numbers need to be made into improper fractions
- Multiply across
- Simplify the answer

Comparing Fractions

- Find least common denominator (LCD) of the fractions
- Rewrite each fraction as an equivalent fraction using the LCD.
- Compare the numerators

Mixed Number to Improper Fraction

- Multiply the whole number by the denominator
- Add the numerator
- Answer becomes numerator
- Denominator stays the same as original number

Improper Fraction to a Mixed number

- Divide numerator by the denominator
- Write remainder as a fraction

Solving Proportions

- ♦ Write the proportion.
- ♦ Cross multiply.
- ♦ Divide by the number with the variable.