

O.G.T. MATHEMATICS: QUICK STUDY GUIDE

Point Values:

Multiple Choice = 1pt

Short Answer = 2 pt

Extended Response = 4 pts

Be sure to support answers for free response.

Skip questions that you're stuck on, come back at the end – LEAVE NOTHING BLANK!!!!

BEFORE THE TEST:

Get a good night sleep
(8 hours is key!)

Eat Breakfast (not candy bars and soda)

Take your TIME!!!

DURING THE TEST:

Draw a picture if there's not one there.

Read the question before attempting to answer.

Try to answer before looking at the multiple choices – look to see if your answer is there.

Your FIRST answer is usually correct – DON'T CHANGE IT!

Does your answer make sense?

Test Taking Strategies:

Eliminate answer choices that look right but are planted to fool you.

Back solve by plugging the answer choices into the question being asked.

Plug and Chug: try plugging in a number instead of a letter if you're stumped by a problem.

Calculator Box:

Scientific Notation is
"inverse decimal point"

Use "10 y^x number" for $10^{\#}$

% is "inverse ="

a b/c is the "fraction button"... (hit "=", it reduces the fraction)

Square Root is "inverse x^2 "

Graphing:

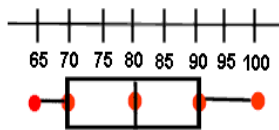
$y = x^2$ graphs a U-shape
if a is positive, it's a smile
if a is negative, it's a frown

$y = |x|$ graphs a V-shape

$y = mx + b$ graphs a line
m = slope (rise over run)
b = y-int

Plotting points: "y's up" wise up
(3, -6) from origin, go right 3, down 6

Box and Whiskers Graph:



The 5 dots from left to right:
Lower bound, 1st quartile, median, 3rd quartile, upper bound

Median – middle number
Mode – the number seen "MOST"
Mean – the average (add and divide by how many)

PEMDAS

Parenthesis

Exponents

Multiply and Divide

(from left to right)

Add and Subtract (from left to right)

When solving for x – use "reverse PEMDAS"

VUXHOY:

Vertical lines have an Undefined slope

$x = \#$

Horizontal lines have a

0 slope

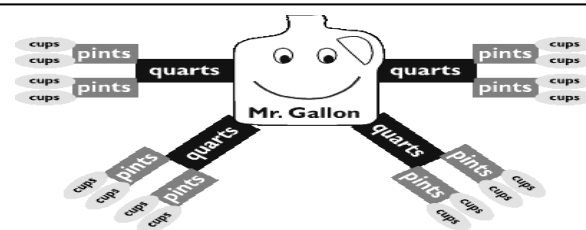
$y = \#$

LAST MINUTE NOTES:

Probability is the measure of how likely an event is

$$P(A) = \frac{\text{The Number Of Ways Event A Can Occur}}{\text{The Total Number Of Possible Outcomes}}$$

An **outcome** is the result of a single trial of an experiment



"Go Help Quincy Pick Cherries" = Gallon, Half gallon, Quart, Pint, Cup

I = prt (simple interest = principal x rate x time)

D = rt (distance = rate x time)

Tax makes things cost **MORE**
Discount makes things cost **LESS**

Parallel Lines have the *same slope*.
Perpendicular Lines have slopes that are *negative reciprocals* (like $\frac{1}{2}$ and -2)

Midpoint: (average of the x's, average of the y's)

$$\text{Midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Surface area of a rectangular prism = area of the base + area of the top + area of each side

Difference between prism:  and pyramid:  Prism has 2 bases while a pyramid has 1 base

Cylinder:  Cone:  Sphere: 

Area = how many squares fit **ON** the shape

Area is in unit^2

Volume = How many blocks fit **IN** the object

Volume is in unit^3

Perimeter = How far around an object

Perimeter is in units

A proportion is an equation with a ratio on each side – to solve, cross multiply and divide.

Example: $\frac{x}{6} = \frac{1}{2}$

$$2x = 6$$

$$x = 3$$

King Henry Died Drinking Chocolate Milk

Kilo

Hecto

Deca

<meter liter gram>

Deci

Centi

Milli

Make sure that your units match before you start doing calculations

The number sets:

Natural numbers	The counting numbers	1, 2, 3, 4, 5, ...
Whole numbers	The set of natural numbers and 0	0, 1, 2, 3, 4, ...
Integers	The set of whole numbers and their opposites	..., -2, -1, 0, 1, 2, ...
Rational numbers	The set of numbers that can be written as a ratio of integers	$-\frac{3}{4}$, 5, -2, 0.5, 0
Irrational numbers	The set of numbers that cannot be written as a ratio of integers	π , $\sqrt{10}$, $8 + \sqrt{2}$