

### Basic concept

Basic concepts	algebra numbers
power /sqrt	different format of same expression
	MADSPM:multiplication/division/power multiply $3^0=1; 3^1=3; 1^n=1$
	minus power: reciprocal, $3^{-1}=1/3; 3^{-2}=1/\text{sqrt}(3)$
	square root: $x^{1/2}$
Solve the equation	move variables to onside; do same op on both side
	Solve the inequalities:same as equation, negative change direction
	Solving ration equation:common denominator; zero denominotor(no solution); infinite solution
Absolute number	Solution is negative?
simultaneous equation	multiple/add/subtract together; solve the equation to get the solution
Word =>equation	is, are, were, did, does, costs =; what (or any unknown value) any variable (x, y, k, b) ; more, sum + ; less, difference - of, times, product × (multiply) ratio, quotient, out of, per ÷ (divide)

### Geometry

coordinate plane	
slope-intercept form	$y=ax+b$
	parallel lines: no solution
	perpendicular lines: negative reciprocal slope)
distance formula	Pythagorean triplets 3-4-5,5-12-13 $\text{sqrt}((x1-x2)^2 + (y1-y2)^2)$
	midpoint formula
point of intersection	solve x: formula 1=formula 2
	solve y: plug back in x
	Other: PITA(arithmetic), graph (no linear)

### Charts and graphs

Scatterplot	
Line Graph	
Bar Graph (or Histogram)	
Two-Way Table	
Figure Facts	variable, unit, relation,legend ruler
probbability	# of outcomes you want/ #of possible outcome
GRIDS-INS	

### summery

Review basic definitions again before the test to make sure you don't get stuck on the "little words."

When you have to manipulate exponents, remember your MADSPM rules

To solve equations for a variable, isolate the variable. Make sure you perform the same operations on both sides of the equation

Inequalities can be worked just like equations, until you have to multiply or divide by a negative number. Then you need to flip the inequality sign.

When solving radical and rational equations, be on the lookout for extraneous solutions. They are answers you get that don't work when plugged back into the original equation.

The absolute value of a number is the positive distance from zero, or practically, making the thing inside the || sign positive. Everything inside the || is equal to the positive and the negative value of the expression to which it is equal. Also remember that || work like (); you need to complete all the operations inside the || before you can make the value positive.

To solve simultaneous equations, simply add or subtract the equations. If you don't have the answer, look for multiples of your solutions. When the simultaneous equation question asks for a single variable and addition and subtraction don't work, try to make something disappear. Multiply the equations by a constant to make the coefficient(s) of the variable(s) you want go to zero when the equations are added or subtracted.

When writing a system of equations, start with the most straightforward piece of information.

You can also use the equations in the answer choices to help you narrow down the possibilities for your equations. Eliminate any answers in which an equation doesn't match your equation.

Parallel lines have the same slope and no solutions. If two lines have the same slope and infinitely many solutions, they are actually the same line. Perpendicular lines have slopes that are negative reciprocals of one another.



### summery (cont)

Rather than worrying about the distance formula, connect the two points and make the resulting line the hypotenuse of a right triangle. Then you can use the Pythagorean Theorem to find the distance.

The coordinates of the midpoint of a line segment with endpoints  $(x_1, y_1)$  and  $(x_2, y_2)$  will be .

When you encounter charts, carefully check the chart for information you should note, and remember that you can use your answer sheet as a ruler to help you locate information or to draw a line of best fit.

Probability is a fractional value between 0 and 1 (inclusive), and it is equal to the number of outcomes the question is asking for divided by the total number of possible outcomes. It can also be expressed as a percent.

When doing Grid-In questions, be sure to keep to the left, and don't bother reducing fractions if they fit in the allotted spaces.



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Page 2 of 2.

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