Pre-Formatted Reports: Benchmark Test Item Analysis - New Format

Data Selections

Institution(s): Middle School,All Schools
Benchmark Administration: 03/24/15, 2014-15 BA2 Math I MS Calculator Active
Trend Profile: 2014-2015
Subject: Mathematics
Test Focus: All Test Focuses
Test Level: 08
Test Category: District Benchmark
Grade: 08
Enrollment: Current

Number of questions: 30
Number of test-taking students: 522

Student Responses

Question - Type	Correct		Incorrect	Most Common Mistake		Point Value	Points Achieved / Possible	P-Value/ Item Mean	Discrimination
	Rate	Value	Total Rate	Rate	Value				
1 - Multiple Choice	41%	A	59%	37%	B	1	214 / 522	0.41	0.42
2 - Multiple Choice	57%	C	43%	21%	A	1	296 / 522	0.57	0.30
3 - Multiple Choice	47%	D	53%	29%	A	1	246 / 522	0.47	0.40
4 - Multiple Choice	74%	C	26%	20%	B	1	384 / 522	0.73	0.34
5 - Multiple Choice	87%	A	13%	6%	D	1	453 / 522	0.87	0.26
6 - Multiple Choice	63%	B	37%	35%	A	1	329 / 522	0.63	0.51
7 - Multiple Choice	57%	C	43%	17%	B	1	299 / 522	0.58	0.40
8 - Multiple Choice	76%	B	24%	12%	D	1	395 / 522	0.76	0.39
9 - Multiple Choice	24%	D	76%	31%	B	1	124 / 522	0.24	0.12
10 - Multiple Choice	49%	A	51%	23%	C	1	256 / 522	0.49	0.40
11 - Multiple Choice	57%	B	43%	21%	C	1	296 / 522	0.57	0.38
12 - Multiple Choice	91%	D	9%	5%	A	1	476 / 522	0.91	0.36
13 - Multiple Choice	27%	D	73%	31%	C	1	142 / 522	0.27	0.37
14 - Multiple Choice	70%	B	30%	13%	C	1	368 / 522	0.70	0.42
15 - Multiple Choice	94%	B	6%	3%	A	1	492 / 522	0.94	0.29
16 - Multiple Choice	58%	C	42%	32%	B	1	303 / 522	0.58	0.43
17 - Multiple Choice	57%	C	43%	18%	A	1	297 / 522	0.57	0.25
18 - Multiple Choice	50%	B	50%	21%	A	1	259 / 522	0.50	0.22
19 - Multiple Choice	70%	C	30%	13%	A	1	367 / 522	0.70	0.47
20 - Multiple Choice	82%	B	18%	11%	C	1	430 / 522	0.82	0.22

21 - Multiple Choice	43%	A	57%	40%	B	1	224 / 522	0.43	0.07
22 - Multiple Choice	67%	D	33%	17%	B	1	351 / 522	0.68	0.43
23 - Multiple Choice	72%	A	28%	19%	B	1	375 / 522	0.72	0.35
24 - Multiple Choice	57%	A	43%	30%	B	1	297 / 522	0.57	0.32
25 - Multiple Choice	75%	C	25%	14%	D	1	393 / 522	0.75	0.41
26 - Multiple Choice	52%	C	48%	19%	A	1	269 / 522	0.52	0.33
27 - Multiple Choice	78%	D	22%	11%	C	1	408 / 522	0.78	0.39
28 - Multiple Choice	68%	D	32%	15%	B	1	353 / 522	0.68	0.27
29 - Multiple Choice	34%	A	66%	27%	B	1	175 / 522	0.34	0.27
30 - Multiple Choice	63%	C	37%	20%	D	1	329 / 522	0.63	0.26
Summary	61%		39%				**320 / 522**		

P-value represents an item's difficulty as evaluated by dividing the total number of correct responses by the total number of students tested. P-value is calculated for true/false, multiple choice, gridded or hot spot-single response items.

Item Mean is the average score for student responses to an open response question or to a multi-part question. Item Mean is calculated for inline response, matching or hot spot-multiple selections items.

Discrimination or Item Total Score Correlation is the correlation between the question score and the overall test score and indicates the extent to which success on an item corresponds to success on the test.

Standards Alignment to Common Core State Standards

Question	ID	Standard Description
1 - Multiple Choice	**CCSS.Math.Content.HSN-RN.A.1**	Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define 5 to the 1/3 power to be the cube root of 5 because we want (5 to the 1/3 power)^3 = 5 to the power (1/3 times 3) to hold, so (5 to the 1/3 power) cubed must equal 5.
2 - Multiple Choice	**CCSS.Math.Content.HSF-IF.B.4**	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.
3 - Multiple Choice	**CCSS.Math.Content.HSA-CED.A.3**	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.
4 - Multiple Choice	**CCSS.Math.Content.HSA-CED.A.3**	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.
5 - Multiple Choice	**CCSS.Math.Content.HSF-IF.B.4**	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.

6 - Multiple Choice	**CCSS.Math.Content.HSF-LE.A.2**	Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
7 - Multiple Choice	**CCSS.Math.Content.8.EE.C.8b**	Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.
8 - Multiple Choice	**CCSS.Math.Content.HSA-CED.A.1**	Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
9 - Multiple Choice	**CCSS.Math.Content.HSS-ID.A.2**	Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
10 - Multiple Choice	**CCSS.Math.Content.HSN-RN.A.2**	Rewrite expressions involving radicals and rational exponents using the properties of exponents.
11 - Multiple Choice	**CCSS.Math.Content.HSF-IF.B.4**	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.
12 - Multiple Choice	**CCSS.Math.Content.HSF-BF.A.2**	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.
13 - Multiple Choice	**CCSS.Math.Content.HSF-BF.A.2**	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.
14 - Multiple Choice	**CCSS.Math.Content.HSF-LE.A.2**	Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
15 - Multiple Choice	**CCSS.Math.Content.HSF-BF.A.2**	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.
16 - Multiple Choice	**CCSS.Math.Content.HSA-CED.A.3**	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.
17 - Multiple Choice	**CCSS.Math.Content.HSS-ID.C.9**	Distinguish between correlation and causation.
18 - Multiple Choice	**CCSS.Math.Content.HSA-CED.A.4**	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law V = IR to highlight resistance R.
19 - Multiple Choice	**CCSS.Math.Content.HSS-ID.B.6a**	Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.
20 - Multiple Choice	**CCSS.Math.Content.HSS-ID.B.5**	Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.
21 - Multiple Choice	**CCSS.Math.Content.HSS-ID.B.5**	Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.
22 - Multiple Choice	**CCSS.Math.Content.8.F.A.3**	Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For

		example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.
23 - Multiple Choice	**CCSS.Math.Content.8.EE.C.7a**	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).
24 - Multiple Choice	**CCSS.Math.Content.8.F.A.2**	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.
25 - Multiple Choice	**CCSS.Math.Content.8.EE.C.8b**	Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.
26 - Multiple Choice	**CCSS.Math.Content.8.NS.A.1**	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.
27 - Multiple Choice	**CCSS.Math.Content.8.EE.B.5**	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.
28 - Multiple Choice	**CCSS.Math.Content.8.EE.C.8b**	Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.
29 - Multiple Choice	**CCSS.Math.Content.8.F.A.1**	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. Function notation is not required in Grade 8.
30 - Multiple Choice	**CCSS.Math.Content.8.F.B.5**	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.