

## MATHEMATICS ADDITIONAL SAMPLE ITEM KEYS

Item	Standard/ Element	DOK Level	Correct Answer	Explanation
1	MGSE5.NBT.6	2	N/A	See scoring rubric and sample response beginning on page 121.
2	MGSE5.OA.1	1	C	The correct answer is choice (C) $(3 + 2) \times (13 - 5)$ . The order of operations requires that you solve the operations within the parentheses first, and then multiply and divide and add and subtract from left to right. The values inside the two parentheses in $(3 + 2) \times (13 - 5)$ are 5 and 8, which are multiplied together for a product of 40. Choice (A) is multiply 2 by the difference within the parentheses, 8, which is 16. Next you add 3, which has a total value of 19. Choice (B) is incorrect because you must first multiply $2 \times 13$ , which is 26. The order of operations requires that you add next, so $26 + 3 = 29$ . Finally, you subtract $29 - 5$ , which is 24. Choice (D) is incorrect because you first multiply the sum of 3 and 2, which is 5, by 13, for a product of 65. Finally you subtract, $65 - 5 = 60$ .
3	MGSE5.OA.2	3	N/A	See scoring rubric and sample response beginning on page 123.
4	GSE-1: 5.OA.2	2	Part A: C Part B: B	See scoring rubric on page 125.
5	MGSE5.NBT.7	2	N/A	See scoring rubric and sample response on page 126.
6	MGSE5.NBT.3	1	B	The correct answer is choice (B) 0.839. This is the decimal form for the given expression. Choice (A) is incorrect because it shows the decimal form for $8 \times \left(\frac{1}{100}\right) + 3 \times \left(\frac{1}{1000}\right) + 9 \times \left(\frac{1}{10000}\right)$ . Choice (C) is incorrect because it shows the decimal form for $8 \times (1) + 3 \times \left(\frac{1}{10}\right) + 9 \times \left(\frac{1}{100}\right)$ . Choice (D) is incorrect because it shows the decimal form for $8 \times (10) + 3 \times (1) + 9 \times \left(\frac{1}{10}\right)$ .

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7	MGSE5.NBT.4	1	A	The correct answer is choice (A) 5.8. When rounding to the nearest tenth, use the digit in the hundredths place. If that digit is less than 5, round down. Since the digit 1, in 5.816, is less than 5, round down to 8 in the tenths place. Choice (B) is incorrect because the response shows 5.816 rounded to the nearest hundredth rather than the nearest tenth. Choice (C) is incorrect because it indicates rounding up to 9 tenths, rather than round down to 8 tenths. Choice (D) is incorrect because it indicates rounding to the nearest whole number rather than to the nearest tenth.
8	GSE-1: 5.NBT.4	2	Part A: B/E Part B: D	See scoring rubric on page 127.
9	MGSE5.NBT.2	1	C	The correct answer is choice (C) $10^7$ . When you multiply by 10, each digit's value becomes 10 times larger. If you multiply by 10 seven times, the decimal moves to the left 7 places. Choice (A) is incorrect because it shows a movement to the left of only 5 places. This number is 54,200. Choice (B) is incorrect because it shows a movement to the left of only 6 places. This number is 542,000. Choice (D) is incorrect because it shows a movement to the left of 8 places, rather than 7. This number is 54,200,000.
10	MGSE5.NBT.7	1	C	The correct answer is choice (C) 8.32. This response shows that the student multiplied correctly. Choice (A) is incorrect because the response indicates an error in regrouping tenths and hundredths. Choice (B) is incorrect because the response indicates rounding 3.2 to 3 before multiplying. Choice (D) is incorrect because the response indicates rounding 2.6 to 3 before multiplying.

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11	MGSE5.NBT.7	1	B	The correct answer is choice (B) 3. The student divided correctly and understood that in this case, the quotient is the number of equal groups. Choice (A) is incorrect because the response shows that the decimal portion of the number was not considered. Choice (C) is incorrect because the response indicates the student misplaced the decimal point when dividing. Choice (D) is incorrect because the response indicates the student misplaced the decimal point when dividing.
12	MGSE5.NF.3	1	C	The correct is choice (C) $7\frac{1}{2}$ pounds. This response indicates that student wrote division as a fraction, $\frac{60}{8}$ , and evaluated the expression. Choice (A) is incorrect because the response indicates the student reversed the dividend and divisor. Choice (B) is incorrect because the response indicates the student subtracted 8 before dividing. Choice (D) is incorrect because the response indicates the student added 8 before dividing.
13	MGSE5.NF.1	1	C	The correct answer is choice (C) $\frac{23}{24}$ . This response shows that the mixed number was made into an improper fraction, $\frac{13}{8}$ , and a common denominator, 24, was found for the minuend and subtrahend. Choice (A) is incorrect because the response indicates an error was made when the mixed number was changed to an improper fraction. Choice (B) is incorrect because the response shows the subtrahend of the new fraction with the common denominator. No subtraction was performed. Choice (D) is incorrect because the response indicates the student did not find a common denominator needed for the minuend and subtrahend.
14	MGSE5.NF.4	1	D	The correct answer is choice (D) $4 \times \frac{3}{4} = \frac{12}{4} = 3$ . This response shows that the total of 4 groups of $\frac{3}{4}$ is 3. Choice (A) is incorrect because it finds the total of the circles that is not shaded. Choice (B) is incorrect because it shows the numerators added instead of multiplied. Choice (C) is incorrect because it shows the numerator of the first fraction multiplied by the denominator of the second.

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15	MGSE5.G.2	1	D	The correct answer is choice (D) graph with points on (1, 4), (7, 0), and (4, 6). This response shows the points graphed correctly. Choice (A) is incorrect because the response shows a graph with the point (4, 1) rather than (1, 4). Choice (B) is incorrect because the response shows a graph with the points (4, 1), (0, 7), and (6, 4) rather than (1, 4), (7, 0), and (4, 6). Choice (C) is incorrect because the response shows a graph with a point (7, 1) rather than (7, 0).
16	MGSE5.OA.3	2	N/A	See scoring rubric and sample response beginning on page 128.
17	MGSE5.G.2	1	C	The correct answer is choice (C) (8, 2). To locate coordinates for a point on a coordinate plane, start at (0, 0), move across the x-axis, and then move up or down the y-axis. To get to point C, first move across 8, then up 2. Choice (A) is incorrect because its coordinates show the location for point A. Choice (B) is incorrect because its coordinates show the location for point B. Choice (D) is incorrect because it reverses the x- and y-coordinates, showing a movement of across 2, then up 8, which would locate a point at a different location than point C.
18	MGSE5.G.3	1	C	The correct answer is choice (C). This shape is a rectangle. It has four right angles. Choice (A) is incorrect because this quadrilateral is a trapezoid with no right angles. Choice (B) is incorrect because this quadrilateral is a trapezoid with only has two right angles. Choice (D) is incorrect because it is a right triangle, which has only one right angle.
19	MGSE5.G.3	1	D	The correct answer is choice (D) Both figures have at least one pair of parallel sides. The first figure is a trapezoid, and the top and bottom sides are parallel. It has one set of parallel sides. The second figure is a rectangle and it has two pairs of parallel sides. Choice (A) is incorrect because only the rectangle has four right angles. Choice (B) is incorrect because the trapezoid has only one pair of equal sides, while the rectangle has two. Choice (C) is incorrect because only the rectangle has two sets of parallel sides.
20	MGSE5.G.4	3	N/A	See scoring rubric and sample response beginning on page 130.

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21	GSE-1: 5.MD.5b	2	C/D/F	See scoring rubric on page 132.
22	MGSE5.MD.2	1	B	The correct answer is choice (B). This line plot shows the correct representation of the provided data. Choice (A) is incorrect because the line plot shows X's for fraction amounts that were not recorded by students, such as $\frac{2}{8}$ and $\frac{8}{8}$ . Choice (C) is incorrect because the line plot is missing the data value $\frac{7}{8}$ . Choice (D) is incorrect because the line plot is missing one of the $\frac{3}{8}$ measurements.
23	MGSE5.MD.1	2	N/A	See scoring rubric and sample response beginning on page 133.
24	MGSE5.MD.5	1	D	The correct answer is choice (D) 48. This response shows that the student correctly multiplied the length and width to find the area of the base and then multiplied that product by the height to find the volume, or counted rows and columns of unit cubes. Choice (A) is incorrect because it shows the area of the one side, or how many unit cubes are needed to cover that side, not the volume of the entire prism. Student only multiplied width times height. Choice (B) is incorrect because it shows the area of the base, or how many unit cubes are needed to cover the base, not the volume of the entire prism. The student only multiplied length times width. Choice (C) is incorrect because it shows the volume for only half of the figure rather than the whole figure. The student only multiplied length times height.