

## Key for Grade 3 Mathematics M-STEP Online Sample Item Set

Item #	Key
1	100
2	No, No, Yes, No
3	350
4	first two shapes in first row
5	3
6	square
7	85
8	<b>Part 1:</b> $60 - 23 - 19 = 18$ or equivalent equation; <b>Part 2:</b> Grapevines, \$16 or Apple tree, \$18
9	A
10	20
11	B
12	<b>Part 1:</b> 21; <b>Part 2:</b> 39
13	3
14	C
15	<b>Part A:</b> $36 - 9 - 5 - 2 - 4 - 7 = n$ or equivalent equation; <b>Part B:</b> 73
16	B
17	$\frac{1}{4}$ at first tick mark, $\frac{3}{4}$ at second tick mark, $\frac{1}{4}$ at 1, $\frac{3}{4}$ at 4
18	F, F, T
19	<b>Part 1:</b> $\frac{1}{8}$ at first tick mark after 0, $\frac{1}{4}$ at second tick mark after 0, $\frac{1}{2}$ at fourth tick mark after 0; <b>Part 2:</b> No
20	D
21	any two parts shaded
22	D
23	7
24	C
25	648
26	40
27	$3 \times 8 - 2 = 22$ or equivalent equation
28	first and third equations
29	<
30	points at $5\frac{1}{2}$ , $6\frac{1}{2}$ , $7\frac{1}{4}$ , $7\frac{3}{4}$ , $8\frac{1}{4}$
31	point at 1
32	20, 25

## Key for Grade 4 Mathematics M-STEP Online Sample Item Set

Item #	Key
1	1200
2	C
3	$\frac{1}{3}$ or equivalent fraction (excluding $\frac{4}{12}$ )
4	rectangle: all 3 boxes, rhombus: 3rd box, parallelogram: 3rd box
5	<b>Part 1:</b> book = 4 books; <b>Part 2:</b> June: 2.5 books, July 1.5 books, August 3 books
6	90
7	<b>Part A:</b> any of following: $\frac{3}{6}, \frac{4}{6}, \frac{5}{6}, \frac{6}{6}, \frac{7}{6}, \frac{8}{6}, \frac{9}{6}, \frac{3}{5}, \frac{4}{5}, \frac{5}{5}, \frac{6}{5}, \frac{7}{5}, \frac{8}{5}, \frac{9}{5}, \frac{3}{4}, \frac{3}{4}, \frac{4}{4}, \frac{5}{4}, \frac{6}{4}, \frac{7}{4}, \frac{8}{4}, \frac{9}{4}, \frac{2}{3}, \frac{3}{3}, \frac{4}{3}, \frac{5}{3}, \frac{6}{3}, \frac{7}{3}, \frac{8}{3}, \frac{9}{3}, \frac{1}{2}, \frac{2}{2}, \frac{3}{2}, \frac{4}{2}, \frac{5}{2}, \frac{6}{2}, \frac{7}{2}, \frac{8}{2}, \frac{9}{2}, \frac{1}{1}, \frac{2}{1}, \frac{3}{1}, \frac{4}{1}, \frac{5}{1}, \frac{6}{1}, \frac{7}{1}, \frac{8}{1}, \frac{9}{1}$ ; <b>Part B:</b> any of following: $\frac{4}{8}, \frac{5}{8}, \frac{6}{8}, \frac{7}{8}, \frac{8}{8}, \frac{9}{8}, \frac{4}{9}, \frac{5}{9}, \frac{6}{9}, \frac{7}{9}, \frac{8}{9}, \frac{9}{9}$
8	4
9	4,979
10	both equations in second row and first equation in third row
11	Y, N, Y
12	A
13	45
14	B
15	D
16	5
17	F, F, T
18	12, 17, 22, 27
19	T, F, T
20	$\frac{1}{8}, \frac{4}{8}$
21	$\frac{17}{100} = 0.17, \frac{9}{100} = 0.09$
22	6
23	Not Equal, Not Equal, Equal
24	$5096 - 3488 = 1608$
25	<b>Part A:</b> any 9 of the spaces are shaded; <b>Part B:</b> $1 \frac{3}{4}$
26	$\frac{2}{3} > \frac{1}{2}, \frac{3}{5} < \frac{4}{6}$ or other correct comparisons
27	120
28	five-twelfths or equivalent fraction
29	>
30	square
31	points at $5 \frac{1}{2}, 7 \frac{3}{4}, 7 \frac{1}{4}, 6 \frac{1}{2}, 8 \frac{1}{4}$
32	point at $\frac{1}{2}$

## Key for Grade 5 Mathematics M-STEP Online Sample Item Set

Item #	Key
1	C
2	125
3	C
4	1435
5	135,616
6	B
7	D
8	24
9	D
10	A
11	D
12	$2 \times 8 - 4$ or equivalent expression
13	3 B squares or equivalent
14	64
15	C
16	5 inches
17	$\frac{1}{2}$ or any other fraction less than 1; $\frac{2}{3}$ or any other fraction equal to 1; $\frac{4}{3}$ or any other fraction greater than 1
18	3
19	0.75 or $\frac{3}{4}$
20	B
21	$\frac{1}{6}$ , $\frac{7}{8}$
22	Bank (9, 1); Park (6, 5); Library (2, 6); Store (8, 6); Hospital (4, 9)
23	Y, N, Y
24	B
25	one-eighth
26	0 to 1 exclusive
27	$26 \times \frac{1}{8}$ , $13 \times \frac{1}{4}$
28	Y, N, Y, N
29	<
30	square
31	2 at $1 \frac{1}{2}$ feet, 1 at $1 \frac{3}{4}$ feet, 3 at 2 feet, 1 at $2 \frac{1}{4}$ feet, 3 at $2 \frac{1}{2}$ feet
32	point at one-half
33	12, 17, 22, 27

## Key for Grade 6 Mathematics M-STEP Online Sample Item Set

Item #	Key
1	A
2	one-half or equivalent fraction
3	F, T, T
4	<b>Part A:</b> any 25 of the boxes are shaded; <b>Part B:</b> He needs 0.1 more meters of wire.
5	Y, N, Y, N, N
6	base with dimensions $2 \times 18$ or $3 \times 12$ or $4 \times 9$ ( $1 \times 36$ is also correct but won't fit on graph)
7	$x + 7 = 10$ , $4 \cdot x = 12$
8	10
9	689
10	$8t + 32$ , $(8 \times t) + (8 \times 4)$
11	<b>Part A:</b> any fraction less than 1; <b>Part B:</b> any fraction greater than or equal to 1
12	200
13	450
14	B
15	$y = 40 + x$ or equivalent equation
16	210
17	<b>Part A:</b> False, <b>Part B:</b> 280
18	$(-a, b) = (-2, 3)$ , $(a, -b) = (2, -3)$ , $(-c, -d) = (4, -2)$
19	168
20	T, F, F, F, T, F
21	45
22	Y, N, Y
23	<b>Part A:</b> $n > 0$ ; <b>Part B:</b> $n < 0$
24	4 to 9 miles
25	B
26	15
27	C
28	>
29	2 at $1 \frac{1}{2}$ feet, 1 at $1 \frac{3}{4}$ feet, 3 at 2 feet, 1 at $2 \frac{1}{4}$ feet, 3 at $2 \frac{1}{2}$ feet

## Key for Grade 7 Mathematics M-STEP Online Sample Item Set

Item #	Key
1	$5 \frac{1}{3}$ or equivalent value
2	3.75
3	A
4	C
5	36.8
6	$p = \frac{1}{6}$
7	$-b$ , $a \cdot -b$ or $-a \cdot b$ , $-c$ , $\frac{1}{b}$ or $\frac{1}{-b}$
8	4th and 5th calculations
9	<b>Part A:</b> any fraction less than 1; <b>Part B:</b> any fraction greater than or equal to 1
10	D
11	A
12	0.6
13	7.5
14	$n = -3.7$
15	$y = 12x$
16	5.40
17	T, F, T
18	Not true for any case, True for all cases, True for some cases, True for some cases
19	B
20	<b>Part A:</b> Steps 1, 2, 4; <b>Part B:</b> $c = 8$
21	2
22	B
23	Y, Y, N, N, Y
24	2nd and 3rd graphs
25	17.5 or equivalent value
26	86.59
27	4
28	Game 6: 4 points, Game 7: 20 points; Game 6: 6 points, Game 7: 18 points; Game 6: 18 points, Game 7: 6 points; Game 6: 20 points, Game 7: 4 points (Technically, there are other point totals, e.g. Game 6: 5 points, Game 7: 19 points, that would meet the criteria but the graph is limited to an even number of points.)
29	base with dimensions $2 \times 18$ or $3 \times 12$ or $4 \times 9$ ( $1 \times 36$ is also correct but won't fit on graph)
30	2 at $1 \frac{1}{2}$ feet, 1 at $1 \frac{3}{4}$ feet, 3 at 2 feet, 1 at $2 \frac{1}{4}$ feet, 3 at $2 \frac{1}{2}$ feet
31	15
32	$6x + 15$