Grade 4 Mathematics Paper-Based Practice Test Answer Key

The following pages include the answer key for all machine-scored items, followed by the rubrics for the hand-scored items. The rubrics show sample student responses. Other valid methods for solving the problem can earn full credit unless a specific method is required by the item. In items where the scores are awarded for full and partial credit, if students make a computation error, they can still earn points for reasoning or modeling.

Item Number	Answer Key	Standard
1	C	4.NF.5
2	B, D, E	4.G.2
3	6370	4.NBT.5
4	12	4.MD.3
5	C	4.NF.4.c
6	*See rubric*	4.OA.3
7	C	4.NF.1
8	C	4.OA.4
9	1	4.G.3
10	A, E	4.NF.3b
11	Part A: D Part B: 29	4.MD.7
12	*See rubric*	4.NBT.5

Rubrics start on the next page.

Scoring Rubric for Grade 4 Practice Test Item #6:

Score	Description
4	The student response demonstrates an exemplary understanding of the Operations and Algebraic Thinking concepts involved in solving multi-step word problems posed with whole numbers and having whole-number answers using the four operations, and representing these problems using equations with a letter standing for the unknown quantity. The student solves real-world problems using multiple operations and money.
3	The student response demonstrates a good understanding of the Operations and Algebraic Thinking concepts involved in solving multi-step word problems posed with whole numbers and having whole-number answers using the four operations, and representing these problems using equations with a letter standing for the unknown quantity. Although there is significant evidence that the student was able to recognize and apply the concepts involved, some aspect of the response is flawed. As a result the response merits 3 points.
2	The student response demonstrates a fair understanding of the Operations and Algebraic Thinking concepts involved in solving multi-step word problems posed with whole numbers and having whole-number answers using the four operations, and representing these problems using equations with a letter standing for the unknown quantity. While some aspects of the task are completed correctly, others are not. The mixed evidence provided by the student merits 2 points.
1	The student response demonstrates a minimal understanding of the Operations and Algebraic Thinking concepts involved in solving multi-step word problems posed with whole numbers and having whole-number answers using the four operations, and representing these problems using equations with a letter standing for the unknown quantity.
0	The student response contains insufficient evidence of an understanding of the Operations and Algebraic Thinking concepts involved in solving multi-step word problems posed with whole numbers and having whole-number answers using the four operations, and representing these problems using equations with a letter standing for the unknown quantity to merit any points.

Sample Response:

a. ($)28, $(4\times3)+(2\times8)=12+16=28$
b. ($)6, $20-(2\times3+8)=6$
c. $3+(2\times8)+11=m$ or equivalent
d. ($)30, $3+(2\times8)+11=m$
$3+16+11=m$, $30=m$

Scoring Rubric for Grade 4 Practice Test Item #12:

Score	Description
3	Student response includes each of the following 3 elements. • Computation component: Rico had 1276 more yards than Ed after the first three games. • Modeling component: Student shows work or explains how to determine the number of yards that Ed had and Rico had after the 3 games. • Modeling component: Student shows work or explains how to determine how many more yards Rico had than Ed. Sample Student Response: I found that Ed had 638 yards by adding $157 + 308 + 172.$ Rico had 3 times the number of yards as Ed, so $638 \times 3 = 1914.$ To find how many more yards Rico had than Ed, I subtracted 638 from 1914 and got 1276. Note: A variety of explanations are valid as long as the student uses a mathematically correct approach to solving the problem.
2	Student response includes 2 of the 3 elements. If a computation mistake is made, credit cannot be given for the computation component, but points can be given for modeling.
1	Student response includes 1 of the 3 elements.
0	Student response is incorrect or irrelevant.