Directions: Answer the following question(s).

1 Ms. Alonzo brought some juice boxes to a picnic. She brought 6 packs of juice boxes. Each pack has 8 juice boxes. She also brought another 3 juice boxes. Which expression can be used to find the total number of juice boxes that Ms. Alonzo brought to the picnic?

A. $6 \times 3 + 8$
B. $6 \times 8 + 3$
C. $6 \times (8 + 3)$
D. $(6 + 8) \times 3$

Master ID: 2205957 Revision: 3
Correct: B
Rationale:
A. This is the result of incorrectly multiplying 6 by 3 and adding 8.
B. First multiply 6 x 8, then add the other 3.
C. This is the result of incorrectly using parentheses to require adding before multiplying.
D. This is the result of correctly placing the numbers but incorrectly placing the signs.
Rubric: 1 Point(s)
Standards:
MGSE5.OA.2

2 Which place value position is ten times larger than the hundreds position?

A. ones place
B. tens place
C. hundreds place
D. thousands place

Master ID: 3746583 Revision: 1
Correct: D
Rationale:
A. The student may not understand that ones position is 100 times smaller than the hundreds position.
B. The student may not understand that the tens place is ten times smaller than the hundreds place.
C. The student may not understand what ten times larger means and chose hundreds place because that was given in the question.
D. *Correct Answer*; The student understands that the thousands place is ten times larger than the hundreds place.
Standards:
MGSE5.NBT.1

Directions: Answer the following question(s).

3 A half-dollar is worth 0.50 of a dollar. Which of the following correctly states the solution and explains how to find the value of 10^3 half-dollars?

A. To multiply 0.50×10^3, remove the decimal point and add on 3 zeros to the number, making the value \$50,000.

B. To multiply 0.50×10^3, move the decimal point 3 places to the right, making the value \$500.

C. To multiply 0.50×10^3, move the decimal point 1 place to the right, making the value \$5.00.

D. To multiply 0.50×10^3, move the decimal point 1 place to the left, making the value \$0.05.

Master ID: 305018 Revision: 4
Correct: B
Rationale:
A. This is the result of not understanding that when you multiply a decimal by a power of 10, the number of zeros in the power of 10 factor represents the number of places to move the decimal point to the right.
B. This is the result of understanding that when you multiply a decimal by a power of 10, the number of zeros in the power of 10 factor represents the number of places to move the decimal point to the right.
C. This is the result of not understanding that when you multiply a decimal by a power of 10, the number of zeros in the power of 10 factor represents the number of places to move the decimal point to the right. So, since there are 3 zeros in 1,000, the decimal point should be moved 3 places to the right, not 1 place.
D. This is the result of confusing division by a power of 10 with multiplication by a power of 10 and ignoring the number of zeros in the power of 10 factor.
Rubric: 1 Point(s)
Standards:
MGSE5.NBT.2

4 What is five and twenty-three thousandths in standard form?

A. 5.023

B. 5.23

C. 5.0023

D. 5.230

Master ID: 3293852 Revision: 1
Correct: A
Rationale:
A. Correct answer
B. Student(s) may not have been able to distinguish between the thousandths place and the hundredths place values. This is five and twenty-three hundredths.
C. Student(s) may not have been able to distinguish between place values, as this is five and twenty-three ten thousandths.
D. Student(s) may not have understood place values, as this is five and twenty-three hundredths with a trailing zero.
Rubric: 1 Point(s)
Standards:
MGSE5.NBT.3a

Directions: Answer the following question(s).

5 Which of the following statements is true?

A. 1.03 > 1.004
B. 1.030 > 1.03
C. 1.05 > 1.3
D. 1.011 > 1.10

Master ID: 2205977 Revision: 3
Correct: A
Rationale:
A. 1 and 3 hundredths is greater than 1 and 4 thousandths.
B. This is the result of thinking that 30 thousandths is greater than 3 hundredths when the numbers are in fact equal.
C. This is the result of thinking that 5 hundredths is greater than 3 tenths.
D. This is the result of incorrectly thinking that 11 thousandths is greater than 10 hundredths.
Rubric: 1 Point(s)
Standards:
MGSE5.NBT.3b

6 Lucas used a calculator to divide 15 by 8 and got 1.875. What is the number rounded to nearest tenth?

A. 1.8
B. 1.88
C. 1.9
D. 2.0

Master ID: 3272679 Revision: 1
Correct: C
Rationale:
A. Student(s) may not have thought it was necessary to round up.
B. Student(s) may have confused the hundredth's place with the tenth's place.
C. Correct answer
D. Student(s) may have thought it was necessary to round the one's place up.
Rubric: 1 Point(s)
Standards:
MGSE5.NBT.4

7 Evaluate.

$7 \times (2 + 3) - 7$

A. 28
B. 26
C. 23
D. 14

Master ID: 3249645 Revision: 1
Correct: A
Rationale:
A. Correct answer
B. Student(s) may have correctly added 2 plus 3 to total 5 and then multiplied 7 by 5 to correctly total 35. Student(s) may have then incorrectly calculated the difference between 35 and 7 as 26 instead of 28.
C. Student(s) may have correctly calculated 2 plus 3 as 5 and then calculated an incorrect product of 30 when multiplying 5 and 7. Student(s) may have then subtracted 7 from 30 to find a difference of 23.
D. Student(s) may have correctly calculated the sum of 2 and 3 as 5. Student(s) may have then incorrectly subtracted 7 from 5 to calculate an incorrect total of 2, rather than (–2). Student(s) may have then multiplied 7 by 2 to total 14.
Rubric: 1 Point(s)
Standards:
MGSE5.OA.1

Directions: Answer the following question(s).

8 What is the value of this expression?

$(6 + 11) - (6 \times 2)$

A. 22
B. 11
C. 9
D. 5

Master ID: 3247405 Revision: 1
Correct: D
Rationale:
A. Student(s) may not have known how to evaluate an expression using parentheses and evaluated the equation from left to right.
B. Student(s) may have evaluated the expression within the parentheses first but may have made a mistake by only evaluating the expression in the first parentheses. Student(s) may have correctly subtracted in the first parentheses but may have subtracted the sum by 6, ignoring the × 2 completely.
C. Student(s) may have known to solve the expressions inside the parentheses. Student(s) may have misread the operation symbol in the second parentheses and thought it was an addition symbol.
D. Correct answer
Rubric: 1 Point(s)
Standards:
MGSE5.OA.1

9 Sarah has some marbles. Glen has 10 times as many marbles as Sarah. Which of the following can be the numbers of marbles they have?

A. Sarah has 59 and Glen has 590.
B. Sarah has 420 and Glen has 42.
C. Sarah has 317 and Glen has 327.
D. Sarah has 26 and Glen has 2,600.

Master ID: 305001 Revision: 3
Correct: A
Rationale:
A. Glen's number is 10 times Sarah's number.
B. This has Glen's total as 1/10th of Sarah's (or Sarah's as 10 times Glen's).
C. This has Glen's total as 10 more rather than 10 times more.
D. This pair has Glen's total as 100 times more instead of 10 times more.
Rubric: 1 Point(s)
Standards:
MGSE5.NBT.1

Directions: Answer the following question(s).

10 Look at the expression below.

$$3.72 \div 10^4$$

Which of these shows and explains the correct location of the decimal point when the expression is evaluated?

A. 0.0000372 because 4 zeros are placed in front of the number when you divide by 10^4

B. 0.000372 because the decimal point moves 4 places to the left when you divide by 10^4

C. 37,200 because the decimal point moves 4 places to the right when you divide by 10^4

D. 3,720,000 because 4 zeros are placed after the number when you divide by 10^4

Master ID: 2258718 Revision: 3
Correct: B
Rationale:

A. This is the result of understanding that when dividing by powers of ten, the number of places the decimal point moves to the left is the same as the exponent but incorrectly moving the decimal point one too many places or having 4 zeros behind the decimal point.

B. This is the result of understanding that when dividing by powers of ten, the number of places the decimal point moves to the left is the same as the exponent.

C. This is the result of understanding that when dividing by powers of ten, the number of places the decimal point moves is determined by the exponent but incorrectly moving the decimal point to the right instead of the left or multiplying rather than dividing.

D. This is the result of misunderstanding that dividing by powers of 10 moves the decimal to the right (this is the result of multiplying, not dividing) and placing the number of zeros depicted by the exponent after the last value in the number.

Rubric: 1 Point(s)
Standards:
MGSE5.NBT.2

11 Which expression is equal to 47.906?

A. $(4 \times 10) + (7 \times 1) + (9 \times 1) + (6 \times 100)$

B. $\left(4 \times 10\right) + \left(7 \times 1\right) + \left(9 \times \frac{1}{1}\right) + \left(6 \times \frac{1}{100}\right)$

C. $\left(4 \times 10\right) + \left(7 \times 1\right) + \left(9 \times \frac{1}{10}\right) + \left(6 \times \frac{1}{1000}\right)$

D. $(4 \times 10,000) + (7 \times 1000) + (9 \times 10) + (6 \times 1)$

Master ID: 3235634 Revision: 1
Correct: C
Rationale:

A. Student(s) may have thought there is not a difference in place value on either side of the decimal point.

B. Student(s) may have thought there is a place value similar to ones in decimal place value and the digit nine is in that place.

C. Correct answer

D. Student(s) may have ignored the decimal point when determining the place value of a digit and may have only looked at the number of digits in the number.

Rubric: 1 Point(s)
Standards:
MGSE5.NBT.3a

Directions: Answer the following question(s).

12 Which expression is **TRUE**?

A. $0.15 > 0.145$
B. $0.254 > 0.42$
C. $0.450 > 0.45$
D. $0.052 > 0.402$

Master ID: 3746586 Revision: 1
Correct: A
Rationale:
A. *Correct Answer*; The student understands that decimals should be compared from left to right (tenths, hundredths, thousandths); the greater number is the first one that has a higher value. In this case, the tenths are identical, but the first number has a higher value in the hundredths place, so it is greater than the second number.
B. The student may have thought that the number with more places always has a greater value, which is true of integers but not of decimals. The student may have thought that the two decimals were comparable to 254 and 42.
C. The student may have thought that a zero at the end of a decimal affects the value. In this answer choice, the two numbers are equal.
D. The student may have thought that zeros do not affect the value of a decimal number. (This is only true of zeros at the very end of the number.) The student may have incorrectly ignored the zeros and compared the 5 and the 4, rather than the 0 and the 4.
Standards:
MGSE5.NBT.3
MGSE5.NBT.3b

13 In the number below, the digit 2 appears three times.

325,012.782

Which of the following are the correct places in which the digit 2 appears?

A. the ten thousands, ones, and thousandths places
B. the thousands, ones, and thousandths places
C. the ten thousands, tens, and thousandths places
D. the thousands, tens, and hundredths places

Master ID: 305066 Revision: 3
Correct: A
Rationale:
A. The digit 2 appears in the ten thousands, ones, and thousandths places.
B. This is the result of correctly identifying the digit 2 in the ones and thousandths places but incorrectly identifies the other 2 in the thousands place instead of the ten thousands place.
C. This is the result of correctly identifying the ten thousands and thousandths places but incorrectly identifying the tens place instead of the ones place.
D. This is the result of correctly identifying the tens place but incorrectly identifying the thousands instead of the ten thousands place and the hundredths place instead of the thousandths place.
Rubric: 1 Point(s)
Standards:
MGSE5.NBT.3a

Directions: Answer the following question(s).

14 Which number sentence is correct?

A. 31.009 < 31.07
B. 32.06 < 32.060
C. 44.050 < 40.55
D. 54.02 < 54.004

Master ID: 2258843 Revision: 3
Correct: A
Rationale:
A. This is the result of understanding that 0 hundredths is less than 7 hundredths.
B. This is the result of thinking that 6 hundredths is less than 60 thousandths and not realizing they have the same value.
C. This is the result of not recognizing that 4 ones is greater than 0 ones.
D. This is the result of comparing the 2 hundredths to 0 hundredths but using the incorrect inequality symbol.
Rubric: 1 Point(s)
Standards:
MGSE5.NBT.3b

15 Ronny had $5 and bought a sandwich for $2.37. Round the change Ronny received back from his purchase to the nearest tenth of a dollar.

A. $2.30
B. $2.40
C. $2.60
D. $2.70

Master ID: 3276408 Revision: 1
Correct: C
Rationale:
A. Student(s) may have rounded the cost of the sandwich, and forgot to round up when the digit following the number being rounded is 5 or greater.
B. Student(s) may have rounded the cost of the sandwich instead of the amount of the change.
C. Correct answer
D. Student(s) may have focused on the 6 instead of the 3 in $2.63 and rounded up to $2.70
Rubric: 1 Point(s)
Standards:
MGSE5.NBT.4

16 Compute:

1234 × 24 =

A. 1210
B. 1258
C. 7404
D. 29,616

Master ID: 3283973 Revision: 1
Correct: D
Rationale:
A. Student(s) may not have understood how to proceed with the problem and subtracted 24 from 1234.
B. Student(s) may not have understood how to proceed with the problem and added 24 to 1234.
C. Student(s) may have known to multiply, but did not use a placeholder when computing.
D. Correct answer
Rubric: 1 Point(s)