Rubric and Sample Responses

Question 1
RUBRIC

Score	Description
3	Response demonstrates thorough understanding of using place value notation to find the quotient of whole numbers. • Student uses the correct expanded notation. (1 point) • Student finds the correct quotient for each step of the expanded notation and the correct overall answer. (2 points)

SAMPLE RESPONSE

$3,660 \div 6 = (3,000 + 600 + 60) \div 6 = 500 + 100 + 10 = 610$

I know that $6 \times 5 = 30$ and $6 \times 50 = 300$, so $6 \times 500 = 3000$. 600 divided by 6 is 100, and 60 divided by 6 is 10. When I add the three quotients together, I get 610.

Question 2
RUBRIC

Score	Description
3	Response demonstrates thorough understanding of the relationship between multiplication and division. • Student finds the correct solution. (1 point) • Student clearly describes the relationship between multiplication and division by comparing parts of both equations. (2 points)

SAMPLE RESPONSE

I know that multiplication and division are opposite operations. The division problem means how many groups of 6 are in 3660. The multiplication problem means what is the total if we have 610 groups of 6. I know from the division problem that there are 610 groups of 6 in 3660, so that is the answer to the multiplication problem.

Question 3

RUBRIC

Score	Description
3	Response demonstrates thorough understanding of using place value notation to find the quotient of whole numbers. • Student correctly uses expanded notation. (1 point) • Student finds the correct quotient for each step of the expanded notation and the correct final answer. (2 points)

SAMPLE RESPONSE

$3660 \div 500 = (3000 + 600 + 60) \div 500 = 6 + 1 = \$7$ with a remainder of 160.

I know that 6 x 5 = 30 and 6 x 50 = 300, so 6 x 500 equals 3000. 500 will go into 600 once, with a remainder of 100. 500 will not go into 60 and even if I add the remainder, I still don't have a number that 500 will go into. The answer is 7 with a remainder of 160.

Question 4

RUBRIC

Score	Description
3	Response demonstrates thorough understanding of writing numerical expressions. • Student creates a correct expression showing the cost of a flashlight and batteries for 610 kits. (1 point) • Student uses words to describe the steps specified by the expression. (2 points)

SAMPLE RESPONSE

610(1.50 +1.00)

I can find the cost of the flashlight and batteries by adding them together. If I multiply that by 610, I will get the cost of 610 flashlights and batteries.

Question 5
RUBRIC

Score	Description
3	Response demonstrates thorough understanding of writing numerical expressions. • Student creates a correct expression showing the cost of a flashlight, batteries, and a first aid kit for 610 kits. (1 point) • Student uses words to describe the steps specified by the expression. (2 points)

SAMPLE RESPONSE

610(1.50 + 1.00 + 2.00)

I can find the cost of the flashlight, batteries, and first aid kit by adding them together. If I multiply that by 610, I will get the cost of 610 kits with all three items.

Question 6
RUBRIC

Score	Description
3	Response demonstrates thorough understanding of adding decimals to hundredths using strategies based on place value. • Student selects items with the correct sum. (1 point) • Student clearly explains how to add whole numbers and decimals. (2 points)

SAMPLE RESPONSE

flashlight $1.50

batteries $1.00

first aid kit $2.00

sunscreen $0.50

magnet $0.30

can opener $0.70

I added the whole numbers together and got 4. I know that 50 hundredths can be added to 50 hundredths to get 100 hundredths, which is the same as one whole. I can also add 30 hundredths and 70 hundredths to get another whole. After adding the 2 extra whole numbers to 4, I get $6.00

Question 7
RUBRIC

Score	Description
3	Response demonstrates thorough understanding of writing numerical expressions. • Student creates a correct expression showing the cost of to make 610 kits. (1 point) • Student uses words to describe the steps specified by the expression. (2 points)

SAMPLE RESPONSE

610(1.50 + 2.00 + 1.00 +0.50 + 0.30 + 0.70)

I would add the cost of the six items I chose to put in the kit, which would give me the cost of one kit. Then I would multiply by 610.

Question 8
RUBRIC

Score	Description
2	Response demonstrates thorough understanding of interpreting numerical expressions by accurately translating the expression. (2 points)

SAMPLE RESPONSE

The $2.00 represents the flashlight, the $0.85 represents the energy bar, and the $0.15 represents the waterproof matches. These are being multiplied by 250, which means there are a total of 250 kits.

Question 9
RUBRIC

Score	Description
3	Response demonstrates thorough understanding of using place value to subtract decimals. • Student uses concept of place value correctly. (1 point) • Student clearly explains the strategy for subtracting. (2 points)

The cost of the flashlight is $1.50 and the cost of the batteries is $1.00, for a total of $2.50. I can subtract $1.89 by using place value. Starting in the hundredths place, I need to subtract 9 hundredths from 0 hundredths. Since one tenth is the same as ten hundredths, I can change the 5 tenths in $2.50 to 4 tenths plus 10 hundredths. Ten hundredths minus 9 hundredth is 1 hundredth. I can also change one whole into ten tenths so that I can subtract 8 tenths from 4 tenths. Four tenths plus 10 tenths is 14 tenths. After I subtract 8 tenths, I have 6 tenths left. My whole numbers are both one, so I won't have any wholes left after I subtract. The difference in the cost is $0.61.

Question 10
RUBRIC

Score	Description
3	Response demonstrates thorough understanding of using a division strategy to find the quotient of whole numbers. • Student finds the number of cases needed to fill 6120 kits. (1 point) • Student clearly shows or explains the steps to find the answer. (2 points)

SAMPLE RESPONSE

$610 \div 24$

There are 20 24's in 610

$610 - 480 = 130$

There are 5 24's in 130

$130 - 120 = 10$

There are 25 24's in 610, with 10 left over.

10 leftover means that I will need an additional case to make 610 kits, so 26 cases are needed.

Question 11
RUBRIC

Score	Description
3	Response demonstrates thorough understanding of computing with multi-digit whole numbers. • Student finds the number of tubes in 15 cases. (1 point) • Student clearly shows or explains a strategy that results in a correct answer. (2 points)

I broke 15 into 10 and 5. 10 x 45 = 450. 5 x 45 would be half of that, so 225. When I added 450 + 225, I got 675.

Question 12
RUBRIC

Score	Description
3	Response demonstrates thorough understanding of computing with decimals. • Student determines a reasonable estimate. (1 point) • Student clearly explains a correct strategy for estimating. (2 points)

SAMPLE RESPONSE

If each flashlight costs $1, the total would be $7,320. Since 50 hundredths is half of one whole dollar, I need to add in half of the total. I can round $7,320 up to $7,400; half of $7,400 would be $3,700. $7,300 + $3,700 would be approximately $11,000.

Question 13
RUBRIC

Score	Description
3	Response demonstrates thorough understanding of computing with decimals. • Student finds the cost for 7320 flashlight. (1 point) • Student clearly shows or explains a strategy to find the answer. (2 points)

SAMPLE RESPONSE

$10,980

7,320 x 1 = 7,320
7,320 x 5 = 36,600
36,600 ÷ 10 = 3,660
7,320 + 3,660 = 10,980

I know that 7,320 x 1 = 7,320. When I multiplied 7,320 x 5, I got 36,600, but I know this is too big. Since I am multiplying by a number less than one, I need to get a smaller number. The 5 is actually five tenths instead of 5, so I need to divide my answer by 10. When I do that, I get 3,660. If I add 3,660 to 7,320, I get 10,980.