Directions: Answer the following question(s).

1

Web Only Interaction

Web Only Interaction

Master ID: 3298852 Revision: 1
Rubric: 2 Point(s)
Standards:
7.EE.B.4.b

2 Jacob earns $15 per hour. He has saved $200 and is planning to buy a dresser that costs $500. Which of these represent the number of hours' pay, x, that Jacob must save to be able to purchase the dresser?

Choose ALL that are correct.

A. $x \geq 20$
B. $15x \geq 300$
C. $15x + 200 \leq 500$
D. $x \leq 20$
E. $15x + 200 \geq 500$

Master ID: 563721 Revision: 1
Correct: ABE
Rationale:
A. Solving the inequality $15x + 200 \geq 500$ for x gives $x \geq 20$.
B. Subtracting 200 from both sides of the inequality $15x + 200 \geq 500$ gives $15x \geq 300$.
C. This is the result of misinterpreting the situation as requiring a "greater than" inequality. This inequality actually represents the number of hours that will not allow him to earn enough money.
D. This is the result of misinterpreting the inequality represented in the situation or reversing the inequality in the process of solving.
E. The sum of the constant of 200 and the product of 15 and the number of hours must be greater than or equal to 500. Thus, the situation may be modeled as $15x + 200 \geq 500$.
Rubric: 1 Point(s)
Standards:
7.EE.B.4.b

3 The chess club has $249 in its general fund and wants to raise additional funds to send its members out of town for an upcoming tournament. The club decides to sell chess piece key chains as a fund-raiser. A quantity of 192 key chains are purchased for $0.42 each, and all of them are sold for $2.50 each.

Which of the equations below model this situation and can be solved to find *x,* the new balance in the club's general fund, after the fund-raiser? Select all that apply.

A. $\$249 - 192(\$0.42) + 192(\$2.50) = x$
B. $\$249 + 192(\$2.08) = x$
C. $192(\$249 - \$0.42 + \$2.50) = x$
D. $\$249 + 192(\$0.42) + 192(\$2.50) = x$
E. $\$249 + 192(\$0.42 - \$2.50) = x$
F. $\$249 + 192(\$2.50 - \$0.42) = x$

Directions: Answer the following question(s).

Master ID: 1894489 Revision: 1
Correct: ABF
Rationale:

A. The chess club's total will be the amount it started with in savings, minus the amount it spent to buy the key chains, plus the amount it sells the key chains for: \$249 – 192(\$0.42) + 192(\$2.50).
B. The club pays \$0.42 for each key chain and resells it for \$2.50, for a net profit of \$2.50 – \$0.42 = \$2.08 on each key chain. Multiplying this net profit by the number of key chains sold gives the fund-raiser proceeds, which can then be added to the beginning general fund balance.
C. This answer incorrectly distributes the factor of 192 to the original savings amount, when it should only be applied to the prices the key chains were bought and sold for.
D. This answer results from adding, the amount of money spent to purchase the key chains, rather than subtracting it as an expense that offsets the proceeds from the fund-raiser.
E. This answer results from subtracting the selling price of the key chain from its purchase price, which is the reverse of determining the net proceeds from selling the key chains.
F. This answer results from determining that the profit on each key chain will be \$2.50 – \$0.42. Multiplying this by 192 and adding that to the amount in that was in the general fund will provide the new balance.

Rubric: 1 Point(s)
Standards:
7.NS.A.2.a

4 Which of these are true statements?

A. $-2\left(1+\frac{1}{2}\right) = -3$

B. $-\frac{2}{3} \div \frac{1}{2} = -\frac{4}{3}$

C. $\frac{1}{4}(2-6) = -5\frac{1}{2}$

D. $-\frac{1}{2}\left(\frac{4}{5} \times \left(-\frac{1}{2}\right)\right) = \frac{1}{5}$

E. $-3\left(\frac{2}{5} \div \frac{1}{5}\right) = 2$

F. $3\left(-\frac{1}{5} - \frac{2}{3}\right) = -2\frac{3}{5}$

Master ID: 2113311 Revision: 1
Correct: ABDF
Rationale:

A. –2(1 + (1/2)) = –2 – 1 = –3
B. The division is equivalent to the product of –(2/3) and 2, which is –4/3.
C. This is the result of not distributing the 1/4 and instead only multiplying it by 2 before subtracting 6.
D. The expression is equivalent to the product (–1/2)(4/5)(–1/2) = (1/4)(4/5) = 1/5.
E. This is the result of distributing the –3 before dividing.
F. 3((–1/5) – (2/3)) = (–3/5) – (6/3) = (–9/15) – (30/15) = –39/15 = –2 9/15 = –2 3/5

Rubric: 1 Point(s)
Standards:
7.NS.A.2.c

Directions: Answer the following question(s).

5 Which of the following questions can be answered by $\frac{x}{4}$? Choose ALL that are correct.

A. Damian makes x chocolates and divides them into 4 boxes. How many candies are in each box?

B. Xiomara's photo album contains x pictures, with 4 pictures on each page. How many pages are in the album?

C. A florist places 4 tulips in each of x bouquets. How many tulips does she use in all?

D. Francine has x books and buys 4 more at the book fair. How many books does she have in all?

E. Michael has 4 pizzas to share among x friends. What fraction of a pizza will each friend receive?

Master ID: 2113301 Revision: 1
Correct: AB
Rationale:
A. A total of x chocolates are divided among 4 boxes. So the expression $x/4$ represents the number of candies per box.
B. A total of x pictures are put into a photo album, with 4 pictures per page. The expression x/4 will represent the number of pages in the book.
C. This scenario is modeled by multiplication, not division.
D. This scenario is modeled by addition, not division.
E. This scenario is modeled by 4/x, rather than x/4.
Rubric: 1 Point(s)
Standards:
7.NS.A.2.b

6 Over a period of three weeks, Charles has saved $196. The first week he saved $42. For the next two weeks, the amount of money he saved each week was the same. Which equations correctly represent w, the amount Charles saved during each of the latter two weeks?

Choose ALL that are correct.

A. $w + w = 154$
B. $w + 42 = 196$
C. $w = 77$
D. $2w + 42 = 196$
E. $w = 119$
F. $3w + 42 = 196$

Master ID: 2113459 Revision: 1
Correct: ACD
Rationale:
A. This expression shows the term $2w$ rewritten as the sum of w and w. The 42 has already been subtracted from both sides of the equation.
B. This is the result of representing only one of the latter two weeks in the equation.
C. Solving the equation $2w + 42 = 196$ gives $w = 77$.
D. Twice the amount saved during each of the latter two weeks, w, plus the constant of $42 equals the total of $196. Thus, the amount saved during each of the latter two weeks may be found by solving the equation $2w + 42 = 196$.
E. This is the result of adding, rather than subtracting, 42 on both sides of the equation to solve for w.
F. This is the result of misrepresenting the coefficient of the variable as the total number of weeks of savings rather than the number of weeks with unknown savings.
Rubric: 1 Point(s)
Standards:
7.EE.B.4.a

Directions: Answer the following question(s).

7 Karl takes a ride in a taxi and is charged \$2.75 for the first $\frac{3}{4}$ of a mile. He is charged \$0.25 for each additional $\frac{1}{10}$ of a mile traveled and gives the driver a \$3.50 tip. Explain how to determine the number of miles that Karl can ride in the taxicab for a total of \$28.50 including the tip. Show your work.

Master ID: 2113418 Revision: 3
Rubric: 2 Point(s)

2 The response is correct and complete. A sample 2-point response is shown below.

First note that Karl is charged \$2.75 for the first 3/4 of a mile or 0.75 mile. Next, let x represent the number of additional miles that Karl can travel in the taxi. Since each additional 1/10 of a mile traveled (or 0.1 mile) costs \$0.25, then each additional mile costs \$2.50. Since the first 3/4 of a mile costs \$2.75 and he gives the driver a \$3.50 tip, the amount Karl will pay can be represented by the following equation: \$2.75 (charge for first 3/4 of a mile) + \$2.50x (charge for driving an additional x miles) + \$3.50 (tip amount) = \$28.50 (total amount spent) or \$2.75 + \$2.50x + \$3.50 = \$28.50. This equation can be solved as follows: \$6.25 + \$2.50x = \$28.50 → \$2.50x = \$22.25 → x = 8.9 miles. Since x represents the number of additional miles (beyond the first 3/4 of a mile) that Karl can travel in the taxi, the total distance is given by x + (3/4) or x + 0.75 = 8.9 miles + 0.75 miles = 9.65 miles. So, Karl can ride 9.65 miles in the taxi for a total of \$28.50.

1 The response is partially correct.

A response at this level includes either a correct answer with an incomplete explanation and work OR an incorrect answer with a detailed explanation and work.

0 The response is incorrect or there is no response.

Standards:
7.EE.B.3

8 Rollers Bowling charges families a group rate of \$12.50 for shoes plus an additional \$4.75 for each game a family member plays. The Jones family's total bill was \$69.50. How many total games did the Jones family pay for?

A. 4 games
B. 5 games
C. 12 games
D. 14 games

Master ID: 2258874 Revision: 3
Correct: C
Rationale:

A. This is the result of incorrectly solving the equation (12.50 + 4.75)g = 69.50, instead of 12.50 + 4.75g = 69.50, to find the number of games, g, that the Jones family paid for.
B. This is the result of incorrectly solving the equation 4.75 + 12.50g = 69.50, instead of 12.50 + 4.75g = 69.50, and rounding down to find the number of games, g, that the Jones family paid for.
C. This is the result of correctly solving the equation 12.50 + 4.75g = 69.50 to find the number of games, g, that the Jones family paid for. 12.50 + 4.75g = 69.50 → 4.75g = 69.50 – 12.50 → 4.75g = 57 → g = 12.
D. This is the result of incorrectly solving the equation 4.75g = 69.50 and rounding down, instead of 12.50 + 4.75g = 69.50, to find the number of games, g, that the Jones family paid for.

Rubric: 1 Point(s)
Standards:
7.EE.B.4.a

Directions: Answer the following question(s).

9 Every month Jordan puts $14 into her bank account. Her grandma puts additional money into Jordan's bank account every month. After 12 months, Jordan has $216 in her bank account. The equation below can be used to determine x, the amount of money her grandma adds each month.

$$12(x + 14) = 216$$

How much did Jordan's grandma put into the account each month?

A. $4.00
B. $16.83
C. $17.45
D. $48.00

Master ID: 2258875 Revision: 3
Correct: A
Rationale:
A. This is the result of correctly solving the equation as follows: $12(x + 14) = 216 \rightarrow 12x + 168 = 216 \rightarrow 12x = 48 \rightarrow x = 4$.
B. This is the result of only distributing the 12 to the x and subtracting 14 from both sides of the equation.
C. This is the result of adding 168 to both sides of the equation rather than subtracting 168 from both sides.
D. This is the amount that Jordan's grandma put into Jordan's bank account over 12 months, but she only put in $4 per month.
Rubric: 1 Point(s)
Standards:
7.EE.B.4.a

10 Twelve is added to a number and then the sum is multiplied by $\frac{4}{5}$ to give 23.6. What is the number?

A. 14.5
B. 17.5
C. 41.5
D. 44.5

Master ID: 2113446 Revision: 3
Correct: B
Rationale:
A. This is the result of first letting the number equal n and then solving the equation $(4/5)n + 12 = 23.6$ instead of $(4/5)(n + 12) = 23.6$.
B. This is the result of letting the number equal n. Therefore, the statement "twelve is added to a number (n) and then the sum is multiplied by 4/5 to give 23.6" can be written as the following equation: $(4/5)(n + 12) = 23.6$. Both sides can be multiplied by (5/4) to give $n + 12 = 23.6(5/4) = 29.5$. Next, subtract 12 from both sides of the equation to give $n = 29.5 – 12 = 17.5$.
C. This is the result of first letting the number equal n and then solving the equation $(4/5)(n – 12) = 23.6$ instead of $(4/5)(n + 12) = 23.6$.
D. This is the result of first letting the number equal n and then solving the equation $(4/5)n – 12 = 23.6$ instead of $(4/5)(n + 12) = 23.6$.
Rubric: 1 Point(s)
Standards:
7.EE.B.4.a

Directions: Answer the following question(s).

11 Kimtoya travels from New York to Florida by airplane. She pays a total of $402 for her flight. This includes a base price of $285 for the ticket plus a fee for each of her 3 pieces of checked baggage. To figure out how much the fee per bag is, she adds $402 to $285 and then divides this total by 3 to get $173. Is this correct? Explain why or why not using the algebraic solution to the problem to support your answer.

Master ID: 2113455 Revision: 3
Rubric: 2 Point(s)

2 The response is correct and complete. A sample 2-point response is shown below.

A response at this level includes both the correct answer and an explanation.

No, this is not correct. Let x be the fee per bag. There are 3 bags, so the total baggage fees are $3x$. The cost for the flight is equal to the base price of the ticket plus the baggage fees. So the equation is $\$285 + 3x = \$402$. To solve for x, isolate it on one side of the equation by undoing everything that has been done to it. Since $285 has been added to the x term, subtract $285 from both sides: $3x = \$117$. Since x has been multiplied by 3, divide both sides by 3 to isolate it: $x = \$39$. So the correct fee per bag is $39.

1 The response is partially correct.

A response at this level may contain the correct answer but a faulty or incomplete explanation OR an explanation that shows strong understanding but includes a minor error that leads to an incorrect solution.

0 The response is incorrect or there is no response.

Standards:
7.EE.B.4.a

12 A taxi company charges its passengers a fee of $3.75 plus $2.25 per mile. Melissa's taxi fare is $38.85. How many miles did Melissa ride in the taxi?

A. 6.475 miles
B. 9.76 miles
C. 10.36 miles
D. 15.6 miles

Master ID: 433139 Revision: 3
Correct: D
Rationale:

A. This is the result of incorrectly solving the equation $(2.25 + 3.75)m = 38.85$ instead of $3.75 + 2.25m = 38.85$ to find the number of miles, m, that Melissa rode.

B. This is the result of incorrectly solving the equation $2.25 + 3.75m = 38.85$ instead of $3.75 + 2.25m = 38.85$ to find the number of miles, m, that Melissa rode.

C. This is the result of incorrectly solving the equation $3.75m = 38.85$ instead of $3.75 + 2.25m = 38.85$ to find the number of miles, m, that Melissa rode.

D. This is the result of first noting that the taxi company charges a flat fee of $3.75 plus an extra charge of $2.25 per mile. Since Melissa's taxi fare is $38.85, the equation $3.75 + 2.25m = 38.85$ can be used to solve for the number of miles, m, that Melissa rode. To solve the equation, subtract 3.75 from both sides of the equation to give $2.25m = 35.1$ or $m = 15.6$. Therefore, Melissa rode 15.6 miles in the taxi.

Rubric: 1 Point(s)
Standards:
7.EE.B.4.a

Directions: Answer the following question(s).

13 Which expression is NOT equivalent to –20?

A. $\frac{(-80)}{4}$

B. $-(\frac{80}{4})$

C. $(\frac{-80}{-4})$

D. $\frac{80}{(-4)}$

Master ID: 2189808 Revision: 3
Correct: C
Rationale:
A. This is the result of understanding that a negative dividend divided by a positive divisor yields a negative quotient.
B. This is the result of understanding that a negative sign for a positive quotient in parentheses yields a negative quotient.
C. This is the result of understanding the quotient of a negative dividend divided by a negative divisor is positive.
D. This is the result of understanding that a positive dividend divided by a negative divisor yields a negative quotient.
Rubric: 1 Point(s)
Standards:
7.NS.A.2.b

14 In a town in Canada, the temperature was 20 °F at sunset. The temperature decreases by 2° every hour. How many hours does it take for the temperature to fall from 20 °F to –6 °F?

A. 3 hours

B. 7 hours

C. 13 hours

D. 14 hours

Master ID: 2300578 Revision: 3
Correct: C
Rationale:
A. This is the result of subtracting 2 from 20 for the first hour and then dividing by 6.
B. This is the result of concluding the temperature change is –14 ÷ –2 = 7.
C. This is the result of determining the temperature decreases –26 degrees ÷ –2 degree/hour = 13 hours.
D. This is the result of concluding the difference is the sum of 20 + (–6) = 14.
Rubric: 1 Point(s)
Standards:
7.NS.A.2.b

Directions: Answer the following question(s).

15 Which expression is equivalent to $-\frac{7}{8}-(-\frac{3}{4})$?

A. $\frac{7}{8}+\frac{3}{4}$

B. $-\frac{7}{8}+\frac{3}{4}$

C. $-\frac{7}{8}+(-\frac{3}{4})$

D. $\frac{7}{8}+(-\frac{3}{4})$

Master ID: 2258936 Revision: 3
Correct: B
Rationale:
A. This incorrectly adds the opposites of both fractions.
B. Subtracting –3/4 is the same as adding its opposite, 3/4.
C. This incorrectly adds –3/4 instead of adding its opposite.
D. This incorrectly adds the opposite of –7/8 instead of the opposite of –3/4.
Rubric: 1 Point(s)
Standards:
7.NS.A.1.c

16 The temperature in a refrigerator is 2.4 °C. The temperature in the attached freezer is –14.9 °C. What is the distance between 2.4 and –14.9 on a number line?

A. 11.5

B. 12.5

C. 16.3

D. 17.3

Master ID: 2300590 Revision: 3
Correct: D
Rationale:
A. This answer results from finding the absolute value of 2.4 + (-14.9) and making an error in the ones place.
B. This results from finding the absolute value of 2.4 + (-14.9).
C. This results from finding the absolute value of 2.4 - (-14.9) and making an error in the ones place.
D. The distance from 2.4 to -14.9 is the absolute value of 2.4 - (-14.9), which is 17.3.
Rubric: 1 Point(s)
Standards:
7.NS.A.1.c

Directions: Answer the following question(s).

17 What is the value of the expression below?

$$\left(1\frac{1}{2} \div \frac{3}{4}\right) + \left(0.87 - 1\right)$$

A. 0.975
B. 1.5367
C. 1.87
D. 2.13

Master ID: 2189813 Revision: 3
Correct: C
Rationale:
A. This is the result of not inverting the second fraction and multiplying 3/2 x 3/4, then subtracting 1 and adding 0.87.
B. This is the result of not converting the mixed number to an improper fraction before multiplying: 1 1/2 x 4/3 = 1 4/6 = 1 2/3, then subtracting 1 converting to a decimal 0.6667 and adding 0.87.
C. This answer is correct as follows: $1\frac{1}{2} \div \frac{3}{4} \rightarrow \frac{3}{2} \times \frac{4}{3} = 2$, then 0.87 - 1 = -1 +0.87, so 2 + (0.87-1) = 1.87.
D. This is the result of dividing the fractions correctly but making a sign error when finding 0.87 - 1.
Rubric: 1 Point(s)
Standards:
7.NS.A.2.c

18 Evaluate the expression below.

$$\frac{3}{5}(121 + 4.5) - \left(\frac{1}{10} - \frac{1}{2}\right)$$

A. 74.7
B. 74.9
C. 75.7
D. 77.5

Master ID: 2206235 Revision: 3
Correct: C
Rationale:
A. This is the result of ignoring the second set of parentheses, 75.3 - 1/10 - 5/10
B. This is the result of adding instead of subtracting (-4/10) or of making a sign error when subtracting 1/10 - 1/2.
C. This is correct since 3/5(121+4.5)-(1/10 - 1/2) = 3(125.5/5)-(1/10 - 1/2) = 3(25.1) - (-4/10) = 75.3 + 0.4 = 75.7.
D. This is the result of finding 3/5(121) then adding 4.5 to get 77.1 then adding 4/10.
Rubric: 1 Point(s)
Standards:
7.NS.A.2.c

Directions: Answer the following question(s).

19 Lexi's mom bought a value pack of snack crackers that contains $48\frac{3}{4}$ ounces of crackers.

She divides this into servings of $1\frac{1}{2}$ ounces each.

What is the total number of FULL servings Lexi's mom can make from the value pack?

A. 32 servings
B. 33 servings
C. 72 servings
D. 97 servings

Master ID: 2258938 Revision: 3
Correct: A
Rationale:
A. There are 48 3/4 = 195/4 ounces of crackers in the value pack. Lexi's mom divides it into servings of 1 1/2 = 6/4 ounces each. So she can make 195/4 ÷ 6/4 servings. Because dividing by a fraction is the same as multiplying by its inverse, this means she can make 195/4 × 4/6 = 780/24 = 32.5 servings, or 32 full servings.
B. This results from properly dividing 48 3/4 by 1 1/2 but rounding up instead of down.
C. This results from multiplying 194/4 by 6/4, instead of by its inverse, and dropping off the remainder.
D. This results from dividing 48 3/4 by 1 first and then by 1/2 and rounding down.
Rubric: 1 Point(s)
Standards:
7.NS.A.2.c

20 Which number is equivalent to this expression?

$$1\frac{1}{2} - (-\frac{3}{5}) + 1\frac{1}{4}$$

A. $2\frac{3}{20}$
B. $2\frac{9}{20}$
C. $2\frac{5}{11}$
D. $3\frac{7}{20}$

Master ID: 2258939 Revision: 3
Correct: D
Rationale:
A. This is the result of solving 1 10/20 – 12/20 + 1 5/20. The mistake is in the first step; all portions of the expression should be added together.
B. This is the result of correctly adding each portion of the equation together and finding a common denominator of 20 but adding the numerators and denominators to come up with 2 27/60 or 2 9/20: 1 10/20 + 12/20 + 1 5/20 = 2 27/60 or 2 9/20.
C. This is the result of correctly adding each part of the expression together but improperly adding the numerators together and the denominators together without finding common denominators: 1 1/2 + 3/5 + 1 1/4 = 2 5/11.
D. This is the result of converting 1 1/2, 3/5, and 1 1/4 to improper fractions with the same denominator: 1 10/20, 12/20, and 1 5/20. Next, each part is added together because the negatives cancel out and turn to a positive to get 3 7/20.
Rubric: 1 Point(s)
Standards:
7.NS.A.1.d

Directions: Answer the following question(s).

21 Marco is solving a subtraction problem. He writes the first step as shown.

$$1\frac{1}{3} - 4\left(\frac{3}{4} + \frac{1}{2}\right)$$

$$1\frac{1}{3} - 3 - 2$$

A. Name the property of operations Marco uses in his first step.

B. Solve the subtraction problem.

Master ID: 2113274 Revision: 3
Rubric: 2 Point(s)

2	The response is correct and complete. A sample 2-point response is shown below. Accept correct answers to both parts. A. distributive property B. –3 2/3, or equivalent
1	The response is partially correct. This level includes one correct and one incorrect answer.
0	The response is incorrect or there is no response.

Standards:
7.NS.A.1.d

22 Jesse opened a savings account with a deposit of $70. He is planning to deposit an additional $10 each week.

A. Write an equation that can be used to determine the number of weeks Jesse has to make deposits for the money in the account to equal $200.

B. Solve your equation. Show your work.

Jesse wants to save enough money to be able to purchase a new bicycle that costs $375.

C. Write an inequality that can be used to determine the number of weeks Jesse has to make deposits for the money in the account to be more than $375.

D. Solve your inequality and show your work. Explain what your answer means in the context of the problem.

Directions: Answer the following question(s).

Master ID: 306759 Revision: 4
Rubric: 4 Point(s)

4 The response demonstrates a high level of understanding. A level 4 response is characterized by:

- A correct equation for part A, such as $70 + 10n = 200$;
- Work shown for part B similar to $70 + 10n = 200 \rightarrow 10n = 130 \rightarrow n = 13$;
- A correct inequality for part C, such as $70 + 10n \geq 375$;
- Work shown for part D similar to $70 + 10n \geq 375 \rightarrow 10n \geq 305 \rightarrow n \geq 30.5$;
- A correct interpretation of the solution, similar to "Jesse needs to save money for at least 31 weeks to have enough to purchase the bicycle."

3 The response demonstrates a strong understanding, but the work contains minor errors. A level 3 response is characterized by:

- An equation in part A that is incomplete or contains one or two minor errors;
- An answer for part B that is correct but is based on incomplete work;
- An inequality in part C that is incomplete or contains one or two minor errors;
- An answer for part D that is correct but is based on incomplete work, or an answer that is incorrect but is based on appropriate work.

2 The response demonstrates a basic but incomplete understanding. A level 2 response is characterized by:

- An equation in part A that is incomplete or contains one or two minor errors;
- An answer for part B that shows basic understanding but may contain errors or be incomplete;
- An inequality in part C that is incomplete or contains one or two minor errors;
- An answer for part D that shows basic understanding but may contain errors or be incomplete.

1 The response demonstrates minimal understanding. A level 1 response is characterized by:

- An equation in part A that is incomplete or contains one or two minor errors but is not completely incorrect;
- An answer for part B that demonstrates little or no understanding;
- An inequality in part C that is incomplete or contains one or two minor errors but is not completely incorrect;
- An answer for part D that demonstrates little or no understanding.

0 The response is completely incorrect, there is no response, or the response is off topic.

Standards:
7.EE.B.4

23 Margaret needs to find the value of the expression below.

$$\frac{1}{2} - \frac{3}{4}(11 + 5) + \frac{1}{4}$$

Which expression has the same value?

A. $\left(\frac{1}{2} + \frac{1}{4}\right) - 12$

B. $\frac{1}{2} - \frac{3}{4} - 16 - \frac{1}{4}$

C. $\frac{1}{2} - \left(\frac{3}{4} + \frac{1}{4}\right) - 16$

D. $\left(\frac{1}{2} + \frac{1}{4}\right) - \frac{33}{4} + 5$

Master ID: 306571 Revision: 3
Correct: A
Rationale:

A. The answer results from an understanding of the associative property as well as the distributive property.
B. This is the result of simplifying the terms in the parentheses first then applying the first negative sign to all the following terms.
C. This is the result of associating the fractions and then simplifying the integers in the parentheses.
D. This is the result of failing to distribute the 3/4 to both terms.

Rubric: 1 Point(s)
Standards:
7.NS.A.1.d

Directions: Answer the following question(s).

24 What is the sum?

$3\frac{1}{4} + 2\frac{1}{3} + 5\frac{3}{4} =$

A. $10\frac{1}{3}$

B. $10\frac{5}{11}$

C. $11\frac{1}{3}$

D. $11\frac{5}{11}$

Master ID: 306563 Revision: 4
Correct: C
Rationale:
A. This results from failing to include the extra whole number that comes from adding 1/4 + 3/4.
B. This results from adding the numerators and denominators.
C. Use the commutative property to rewrite the sum as 3 1/4 + 5 3/4 + 2 1/3. Add the first two mixed numbers, and rewrite as 9 + 2 1/3, which equals 11 1/3.
D. This results from adding the numerators and denominators, and adding an extra whole number.
Rubric: 1 Point(s)
Standards:
7.NS.A.1.d

25 What is the value of the expression below?

$(0-3) - 8\left(\frac{1}{2} + 4\right)$

A. –39
B. 5
C. –3
D. 33

Master ID: 306572 Revision: 3
Correct: A
Rationale:
A. One way to find the answer is by applying the distributive property: -3-8(1/2)-8(4)=-3-4-32=-39
B. This is the result of making a sign error with the -8 and failing to distribute correctly: -3+8(1/2)+4=-3+4+4=5
C. This is the result of failing to distribute the -8 to the 4: -3-8(1/2)+4=-3-4+4=-3
D. This is the result of neglecting the negative sign on the 8: -3+8(1/2)+8(4)=-3+4+32=33
Rubric: 1 Point(s)
Standards:
7.NS.A.1.d

26 What is the value of the expression? Show work or explain your answer.

$\frac{1}{4}\left(0.8 + \frac{1}{2}\right) - 0.4\left(\frac{5}{8} - 2\right)$

Master ID: 306595 Revision: 4
Rubric: 2 Point(s)
2 The response is correct and complete. A sample 2-point response is shown below. Accept a correct answer with sufficient work or a sufficient explanation.
7/8 or equivalent
1/4(0.8 + 1/2) - 0.4(5/8 - 2) → 0.2 + 1/8 - 1/4 + 0.8 → 1 - 1/8 = 7/8
1 The response is partially correct. This level includes a correct answer with insufficient work shown or an incorrect answer based on minor errors.
0 The response is incorrect or there is no response.
Standards:
7.NS.A.2.a

Directions: Answer the following question(s).

27 A parking garage in the city charges $2.75 for the first hour and $1.25 for each additional hour or part thereof. What is the maximum time in hours, x, that Tony can park his car at the garage if he wants to pay less than $8?

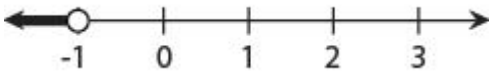
A. $x < 4$
B. $x < 5$
C. $x < 6$
D. $x < 7$

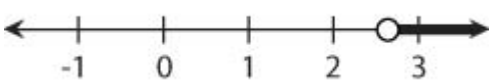
Master ID: 2258963 Revision: 3
Correct: B
Rationale:
A. This is the result of solving the inequality $2.75 + 1.25x < 8$ correctly, but not applying the logic of the given situation and not applying the fact that "less than 4" is not the maximum number of hours. [0,1) = 2.75; [1,2) = 4; [2,3) = 5.25; [3,4) = 6.50; [4,5) = 7.75.
B. This is the result of recognizing the inequality determined by the given situation is $2.75 + 1.25x < 8$, solving it correctly, and applying the logic of the situation to the solution.
C. This is the result of omitting the base price of $2.75 from the inequality, thus solving $1.25x < 8$ and rounding the answer down.
D. This is the result of omitting the base price of $2.75 from the inequality, thus solving $1.25x < 8$ and rounding the resulting answer up.
Rubric: 1 Point(s)
Standards:
7.EE.B.4.b

28 Look at the inequality below.

$$3n + 7 < 4$$

Which graph represents the solution to the inequality shown?

A. 

B. 

C. 

D. 

Master ID: 2258960 Revision: 3
Correct: A
Rationale:
A. This graph correctly graphs and solves for the solution. Subtract 7 from each side and then divide each side by 3 to get –1 > n. To graph this, draw an open circle at –1 on a number line and drawn an arrow pointing to the left of the closed circle.
B. This solution is the result of incorrectly adding 7 to 4 instead of subtracting and also graphs the arrow in the wrong direction.
C. This solution correctly identifies the point where the circle on the graph should be, -1, but graphs the arrow in the wrong direction.
D. This solution is the result of incorrectly adding 7 to 4 instead of subtracting, but graphing in the arrow in the correct direction.
Rubric: 1 Point(s)
Standards:
7.EE.B.4.b

Directions: Answer the following question(s).

29 A community festival sells wristbands for unlimited carnival rides. Single tickets for the rides are also sold, and all rides have the same price. Ani is using the inequality below to decide if she should purchase the wristband for the festival.

$$12 - 0.75x \leq 0$$

Explain the meaning of the 12 and the 0.75 in Ani's inequality, and explain what *x* represents in the context of the situation. Solve the inequality to support your explanations.

Master ID: 2113466 Revision: 3
Rubric: 2 Point(s)

2 The response is correct and complete. A sample 2-point response is shown below.

The response gives a correct interpretation of both numbers and the variable from the inequality.

The inequality shown represents the point at which the difference between a fixed amount and an amount that varies with the value of *x* is less than or equal to zero. With the given context, this means that the price of the wristband is $12, and the price of one ride ticket is $0.75. The value of *x* that will solve the inequality represents the number of rides that Ani would have to go on in order to make buying the wristband the better buy. Specifically, for values of *x* of 16 or greater, the $12 cost of the wristband will be at or below the cost for purchasing individual ride tickets for $0.75.

1 The response is partially correct.

A response at this level may correctly explain one, but not both, of the numbers plus the variable, *x*, or may correctly interpret 12, 0.75, and *x* with explanations that are incomplete or flawed.

0 The response is completely incorrect, there is no response, or the response is off topic.

Standards:
7.EE.B.4.b

30 A student solved an order of operations problem, as shown.

$$(14 - 20)^2 - 2(8 - 5) + 11$$
$$(-6)^2 - 16 - 5 + 11$$
$$36 - 21 + 11$$
$$26$$

The student made an error. Explain what error the student made in the procedure, and find the correct value for the expression.

Master ID: 2113426 Revision: 3
Rubric: 2 Point(s)

2 The response is correct and complete. A sample 2-point response is shown below. Accept a correct explanation and the correct value.

The student did not distribute the –2 to the –5 correctly in the parentheses. –2 x –5 = 10, not –10. This error might have been avoided if the numbers in the parentheses had been combined first. The correct value is 41.

1 The response is partially correct. This level includes either a correct explanation or a correct value for the expression, but not both.

0 The response is incorrect or there is no response.

Standards:
7.EE.B.3

Directions: Answer the following question(s).

31 In science class a student was measuring the temperature of a solution during an experiment.

The solution started out at –2.7°C. After three minutes the temperature had increased by 17.8°C. After three more minutes it had decreased by 29.5°C. Then after three more minutes it had increased by 8.9°C.

Which number represents final temperature in this experiment?

A. –5.5°C
B. –2.8°C
C. 2.8°C
D. 5.5°C

Master ID: 306722 Revision: 3
Correct: A
Rationale:
A. This answer is the ending temperature. It is obtained by the following calculation: –2.7 + 17.8 – 29.5 + 8.9.
B. This answer is the net effect. Ending temperature minus the beginning temperature is –5.5 – (–2.7).
C. This answer is net effect with the wrong sign, calculated as 5.5 – 2.7.
D. This answer is the ending temperature with the wrong sign.
Rubric: 1 Point(s)
Standards:
7.EE.B.3

32 Simplify.

$$2\frac{2}{3} - 1.25 + \frac{5}{6}$$

A. $1\frac{1}{4}$
B. $3\frac{1}{2}$
C. $2\frac{1}{4}$
D. $4\frac{3}{4}$

Master ID: 306741 Revision: 3
Correct: C
Rationale:
A. This is found by subtracting the whole numbers, 2 - 1, before finding 2/3 - 0.25 + 5/6.
B. This is the result of finding the sum of the two fractional terms only.
C. Adding the fraction terms first gives $2\frac{2}{3} + \frac{5}{6} = \frac{21}{6}$, which is equivalent to 3.5.

Subtract 3.5 - 1.25 to get 2.25 or $2\frac{1}{4}$.
D. This is found by using addition instead of subtraction.
Rubric: 1 Point(s)
Standards:
7.EE.B.3

Directions: Answer the following question(s).

33 Alan's family has budgeted $800 for summer activities. The family is close to both the Wild West amusement park and the Splash Town water park. The cost for a family summer pass is the same for each park.

A. Alan determines the family will have $450 remaining in their summer budget if they purchase summer passes to both Wild West and Splash Town. Write an equation to show this mathematically, and use it to determine the cost of summer passes to Wild West and Splash Town.

B. Each of the four family members spends $12 on each visit to Wild West or Splash Town for food and drinks. Given this, write an inequality that represents the greatest number of times Legend's family can go to Wild West and Splash Town.

C. Solve the inequality from part B and interpret the solution for the inequality you found.

Master ID: 2113442 Revision: 3
Rubric: 4 Point(s)

4 The response demonstrates a high level of understanding. A level 4 response is characterized by:
- A correct and complete equation and solution for part A, namely $800 = 450 + 2x \rightarrow 2x = 350 \rightarrow x = 175$, where x is the cost of a family summer pass to Wild West or Splash Town. Each pass costs $175;
- A correct inequality for part B, namely $800 \geq 350 + (12 \cdot 4)x$, where x is the number of trips to Wild West or Splash Town;
- Correct work and a correct solution for part C using the inequality from part B, namely $800 \geq 350 + (12 \cdot 4)x \rightarrow 48x \leq 450 \rightarrow x \leq 9.4$;
- A correct and complete interpretation of the result in part C similar to "Alan and his family can visit the two parks at most 9 times total."

3 The response demonstrates a strong understanding, but the work contains minor errors. A level 3 response is characterized by:
- Two of the three responses meet the criteria for a rubric score of 4.
- The other response shows a basic understanding but contains one or two minor errors.

2 The response demonstrates a basic but incomplete understanding. A level 2 response is characterized by:
- One of the three responses meet the criteria for a rubric score of 4.
- The other responses show a basic understanding but contains one or two minor errors.

1 The response demonstrates minimal understanding. A level 1 response is characterized by:
- None of the responses are correct but do show some basic understanding and are not completely incorrect.

0 The response is completely incorrect, there is no response, or the response is off topic.

Standards:
7.EE.B.4

Directions: Answer the following question(s).

34 Maya's new puppy weighs $3\frac{5}{8}$ pounds. He will gain an average of $\frac{3}{5}$ pound each week until he reaches his adult weight. Which equation can be used to predict his total weight, t, after w weeks?

A. $w = \frac{29}{8}t + \frac{3}{5}$

B. $t = \frac{29}{8}w + \frac{3}{5}$

C. $w = \frac{3}{5}t + \frac{29}{8}$

D. $t = \frac{3}{5}w + \frac{29}{8}$

Master ID: 306757 Revision: 5
Correct: D
Rationale:

A. This equation reverses the positions of both the variables and the weight values.
B. This equation reverses the positions of the starting weight and the weekly weight gain.
C. This equation reverses the positions of the variables.
D. This equation correctly multiplies the weekly weight gain by the number of weeks, added to the starting weight, to equal the total weight.

Rubric: 1 Point(s)
Standards:
7.EE.B.4