

Directions: Answer the following question(s).

- 1 Jan's backpack seems very heavy. She has 4 books in it, each weighing $\frac{7}{8}$ of a pound. Jan's mom doesn't want Jan's backpack to weigh more than 4 pounds. Which statement about the weight of Jan's books is true?
- A. The weight of Jan's books is less than 4 pounds because $\frac{7}{8}$ is less than 1.
- B. The weight of Jan's books is more than 4 pounds because $\frac{7}{8}$ is greater than 1.
- C. The weight of Jan's books is equal to 4 pounds because $\frac{7}{8}$ is the same as 1.
- D. The weight of Jan's books is less than 4 pounds because $\frac{7}{8}$ is greater than 1.

Master ID: 577770 Revision: 3

Correct: A

Rationale:

- A. This is the result of understanding that when you multiply a number by a number less than 1, the product is less than the given number.
- B. This is the result of thinking that the value of $\frac{7}{8}$ is greater than 1 but understanding that multiplying by a value greater than 1 results in a product greater than the given number.
- C. This is the result of incorrectly equating the value of $\frac{7}{8}$ as 1 and multiplying $1 \times 4 = 4$.
- D. This is the result of incorrectly equating the value of $\frac{7}{8}$ as greater than 1, thinking that a number times a value greater than one results in an answer less than the given number.

Rubric: 1 Point(s)

Standards:

MGSE5.NF.5b

- 2 How does the value of $2\frac{3}{4} \times \frac{1}{2}$ compare to $2\frac{3}{4}$?

- A. $2\frac{3}{4}$ is larger because $2\frac{3}{4}$ is larger than $\frac{1}{2}$
- B. $2\frac{3}{4}$ is smaller because we are dividing the mixed number by a fraction
- C. $2\frac{3}{4}$ is smaller because when we multiply by a fraction the answer is less than the original number
- D. $2\frac{3}{4}$ is larger because when we multiply by a fraction of value less than one the answer is less than the original number

Master ID: 3816655 Revision: 1

Correct: D

Rationale:

- A. The student may have misconceptions as to why multiplying a given number by a fraction greater than 1 results in a product greater than the given number and why multiplying a given number by a fraction less than 1 results in a product smaller than the given number.
- B. The student understands that multiplying by a fraction results in a smaller answer, but the mixed number is not smaller than the expression.
- C. The student understands that multiplying by a fraction of value less than one results in an answer of smaller value, but the mixed number is not smaller than the expression.
- D. *Correct Answer*; The student understands that multiplying a given number by a fraction greater than 1 results in a product greater than the given number and why multiplying a given number by a fraction less than 1 results in a product smaller than the given number.

Standards:

MGSE5.NF.5b

Directions: Answer the following question(s).

- 3 Andrew was running on the school track. On Monday, he ran $\frac{5}{6}$ mile and on Tuesday he ran $\frac{7}{8}$ mile.

How much did he run over the two days?

- A. $\frac{13}{24}$ miles
 B. $\frac{6}{7}$ miles
 C. 1 mile
 D. $1\frac{17}{24}$ miles

Master ID:	3816624	Revision:	1
Correct:	D		
Rationale:			
A.	The student correctly found the common denominator. However, rather than multiply the numerator to find an equivalent fraction, the student added the multiplier to the original numerator.		
	$\frac{13}{48} + \frac{13}{48} = \frac{26}{48} = \frac{13}{24}$		
B.	The student may have misconceptions regarding how to add fractions with unlike denominators. The student added the numerators together and the denominators together.		
	$\frac{5}{6} + \frac{7}{8} = \frac{12}{14} = \frac{6}{7}$		
C.	The student may have added the opposite numerator and denominator together.		
	$\frac{5}{6} + \frac{7}{8} = \frac{13}{13} = 1$		
D.	<i>Correct Answer</i> , The student has a clear understanding of addition of fractions with unlike denominators.		
	$\frac{5}{6} + \frac{7}{8}$		
	$\frac{40}{48} + \frac{42}{48} = \frac{82}{48} = 1\frac{34}{48} = 1\frac{17}{24}$		
Standards:			
MGSE5.NF.2			

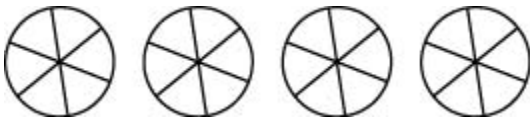
- 4 Ingrid watched television for $2\frac{1}{4}$ hours and Devon watched for $3\frac{2}{3}$ hours. For how many hours did they watch television in total?

- A. $5\frac{1}{4}$ hours
 B. $5\frac{3}{7}$ hours
 C. $5\frac{5}{12}$ hours
 D. $5\frac{11}{12}$ hours

Master ID:	2206012	Revision:	3
Correct:	D		
Rationale:			
A.	This is the result of finding a common denominator, but not changing the numerators and simply adding the given numerators.		
B.	This is the result of adding the numerators and denominators without finding a common denominator.		
C.	This is the result of correctly finding a common denominator but subtracting the fractions instead of adding.		
D.	This is the result of correctly adding the two fractions: $2\frac{1}{4} + 3\frac{2}{3} = 2\frac{3}{12} + 3\frac{8}{12} = 5\frac{11}{12}$.		
Rubric:	1 Point(s)		
Standards:	MGSE5.NF.2		

Directions: Answer the following question(s).

- 5 During lunch, 3 friends planned to share 4 pizzas equally. Each pizza is cut into 6 equal pieces as shown.



How many pizzas does each friend get?

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

Master ID: 563744 Revision: 4

Correct: B

Rationale:

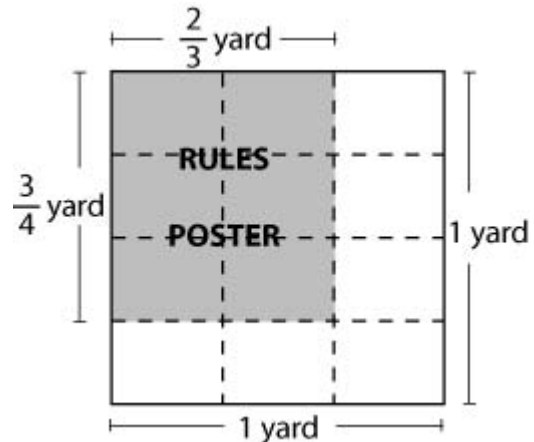
- A. This is the result of incorrectly dividing 3 by 4 instead of 4 by 3.
 B. This is the result of correctly dividing 4 (the number of pizzas) by 3 (number of friends).
 C. This is the result of incorrectly dividing 6 (slices of pizza) by 4 (number of pizzas).
 D. This is the result of incorrectly dividing 6 (the slices in each pizza) by 3 (the number of friends eating pizza).

Rubric: 1 Point(s)

Standards:

MGSE5.NF.3

- 6 The poster that lists the classroom rules in Mrs. Akin's classroom has a length of $\frac{2}{3}$ yard and a width of $\frac{3}{4}$ yard.



What is the area of the poster?

- A. $\frac{1}{2}$ square yard
 B. $\frac{5}{7}$ square yard
 C. $\frac{5}{6}$ square yard
 D. $\frac{2}{3}$ square yard

Master ID: 2206028 Revision: 3

Correct: A

Rationale:

- A. $\frac{2}{3} \times \frac{3}{4} = \frac{6}{12} = \frac{1}{2}$.
 B. This is the result of incorrectly adding $\frac{2}{3} + \frac{3}{4}$.
 C. This is the result of incorrectly solving for the perimeter by adding the numerators $2 + 2 + 3 + 3 = 10$ and using the denominator of 12, thus finding $\frac{10}{12} = \frac{5}{6}$.
 D. This is the length of the poster.

Rubric: 1 Point(s)

Standards:

MGSE5.NF.4b

Directions: Answer the following question(s).

- 7 Eric ran $10\frac{1}{2}$ miles a day to train for a triathlon. Every week he swam $\frac{1}{2}$ of that distance to train for the swimming portion of the race. How far did he swim each week?

- A. $5\frac{1}{4}$ miles
- B. 5 miles
- C. $3\frac{1}{4}$ miles
- D. $2\frac{3}{4}$ miles

Master ID:	3249350	Revision:	1
Correct:	A		
Rationale:	<p>A. Correct answer</p> <p>B. Student(s) may have ignored the fraction and simply found half of the whole number, 10, to arrive at an incorrect answer of 5.</p> <p>C. Student(s) may have incorrectly converted $10\frac{1}{2}$ to $13\frac{1}{2}$ by adding the whole number to the denominator and then placing the sum as the numerator. Student(s) may have then multiplied $13\frac{1}{2}$ by $\frac{1}{2}$ to arrive at a total of $13\frac{1}{4}$ and then converted to $3\frac{1}{4}$.</p> <p>D. Student(s) may have incorrectly converted $10\frac{1}{2}$ to $11\frac{1}{2}$ by adding the whole number to the numerator. Student(s) may have then multiplied $11\frac{1}{2}$ by $\frac{1}{2}$ to arrive at a total of $11\frac{1}{4}$ and then converted to $2\frac{3}{4}$.</p>		
Rubric:	1 Point(s)		
Standards:	MGSE5.NF.6		

- 8 Kylee's mom bought $3\frac{1}{2}$ pounds of potatoes. She will give her neighbor $\frac{1}{2}$ of them. How many pounds of potatoes will she keep for herself?

- A. 7 lbs.
- B. 3 lbs.
- C. $1\frac{3}{4}$ lbs.
- D. $1\frac{1}{4}$ lbs.

Master ID:	3249170	Revision:	1
Correct:	C		
Rationale:	<p>A. Student(s) may have simply doubled $3\frac{1}{2}$ rather than dividing $3\frac{1}{2}$ by 2.</p> <p>B. Student(s) may have read that Kylee's mom was giving half of them away and may have incorrectly assumed she was giving the $\frac{1}{2}$ lb. away rather than $\frac{1}{2}$ of the $3\frac{1}{2}$ lbs.</p> <p>C. Correct answer</p> <p>D. Student(s) may have made an error when reducing $\frac{7}{4}$ and may have gotten $1\frac{1}{4}$ rather than $1\frac{3}{4}$.</p>		
Rubric:	1 Point(s)		
Standards:	MGSE5.NF.6		

Directions: Answer the following question(s).

- 9 Lindsay has 4 large frames for her photos. She places photos in the frame. Each photo takes up $\frac{1}{8}$ of the frame's space. One frame is shown below.

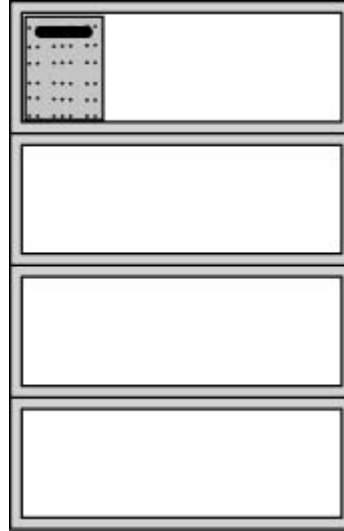


How many photos can Lindsay place in all 4 frames?

- A. 8
- B. 12
- C. 28
- D. 32

Master ID: 2206054 Revision: 3
 Correct: D
 Rationale:
 A. This is the number of photos in 1 frame.
 B. This is the result of solving by adding $4 + 8$.
 C. This is the result of solving $8 - 1 = 7$ and 7×4 .
 D. This is correct, $4 \div \frac{1}{8} = 32$.
 Rubric: 1 Point(s)
 Standards:
 MGSE5.NF.7c

- 10 Cindy has a 4-shelf bookcase in which she wants to place baskets. Each basket takes up $\frac{1}{4}$ of one shelf, as shown.



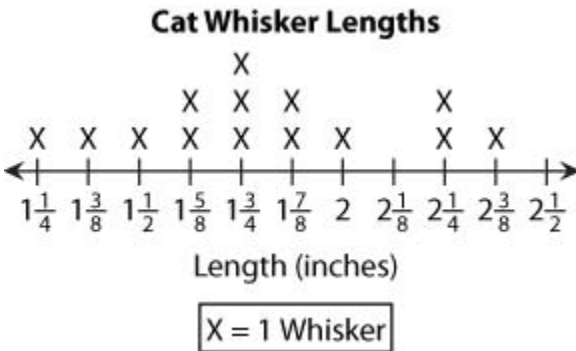
Cindy wants to place as many baskets on the shelves as possible. How many baskets can Cindy place on the 4 shelves?

- A. $\frac{1}{16}$
- B. $\frac{1}{4}$
- C. 4
- D. 16

Master ID: 305383 Revision: 5
 Correct: D
 Rationale:
 A. This is the result of finding $4 \div \frac{1}{4}$ but using the reciprocal of the dividend (4) instead of the reciprocal of the divisor ($\frac{1}{4}$).
 B. This is the amount of 1 shelf that is taken up by 1 basket.
 C. This is the number of baskets that fit on one shelf.
 D. This is the result of correctly dividing $4 \div \frac{1}{4}$ by using the reciprocal of the divisor and multiplying $4 \times 4 = 16$.
 Rubric: 1 Point(s)
 Standards:
 MGSE5.NF.7c

Directions: Answer the following question(s).

- 11 Christina measured her cat's whiskers and made this line plot to show the results.



What is the total length of the 3 longest whiskers?

- A. $4\frac{1}{8}$ inches
 B. $5\frac{1}{4}$ inches
 C. $6\frac{7}{8}$ inches
 D. $7\frac{1}{8}$ inches

Master ID: 305439 Revision: 3
 Correct: C
 Rationale:
 A. This is the result of adding the lengths of the 3 shortest whiskers.
 B. This is the result of adding the lengths of the 3 whiskers that measure $1\frac{3}{4}$ inches long.
 C. The sum of the lengths of the 3 longest whiskers is $2\frac{1}{4} + 2\frac{1}{4} + 2\frac{3}{8} = 2\frac{2}{8} + 2\frac{2}{8} + 2\frac{3}{8} = 6\frac{7}{8}$ inches.
 D. This is the result of multiplying the length of the longest whisker by 3.
 Rubric: 1 Point(s)
 Standards:
 MGSE5.MD.2

- 12 The line plot shows the lengths of 8 hiking trails in a state park.



Deon hiked the 4 longest trails one week. What was the total distance he hiked?

- A. $8\frac{1}{2}$ miles
 B. $9\frac{1}{4}$ miles
 C. $9\frac{1}{2}$ miles
 D. $9\frac{3}{4}$ miles

Master ID: 2258775 Revision: 3
 Correct: D
 Rationale:
 A. This is the result of correctly converting $\frac{1}{2}$ to $\frac{5}{2}$, but making an addition error by not converting $\frac{5}{2}$ to a common denominator of $\frac{10}{4}$; getting $\frac{34}{4}$ instead of $\frac{39}{4}$ ($\frac{9}{4} + \frac{9}{4} + \frac{5}{2} + \frac{11}{4} = \frac{39}{4}$, not $\frac{35}{4}$).
 B. This is the result of not including the $2\frac{1}{4}$ -mile trail twice and only adding the 4 biggest numbers with an X above them.
 C. This is the result of adding together the 4 largest numbers on the bottom of the line plot.
 D. The sum of the trail lengths is $\frac{9}{4} + \frac{9}{4} + \frac{10}{4} + \frac{11}{4} = \frac{39}{4} = 9\frac{3}{4}$ miles.
 Rubric: 1 Point(s)
 Standards:
 MGSE5.MD.2

Directions: Answer the following question(s).

13 Look at the shape below.



Which list contains the names that can be used for this shape?

- A. quadrilateral, parallelogram, rectangle
- B. parallelogram, rectangle, rhombus
- C. quadrilateral, parallelogram, square
- D. parallelogram, square, rectangle

Master ID: 3619669 Revision: 1
Correct: A
Rationale:
A. All 3 names can be used for the shape.
B. This list incorrectly includes a rhombus, which has equal side lengths.
C. This list incorrectly includes a square, which has equal side lengths.
D. This list incorrectly includes a square, which has equal side lengths.
Rubric: 1 Point(s)