THIRD SPACE LEARNING

# Mock STAAR 4th Grade Assessment

To prepare for the State of Texas Assessments of Academic Readiness (STAAR)

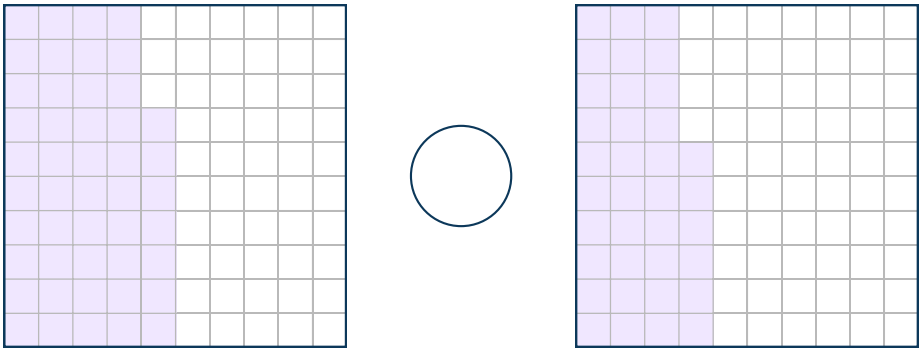
Grade 4

# Questions

Name: ..... Class: .....

Date: ..... Score: .....

**1** Which of the following statements correctly compares the two hundreds grids below?



A. $0.47 > 0.36$

B. $0.47 < 0.36$

C. $0.46 = 0.37$

D. $0.37 > 0.46$

**2** The table shows the amounts Hayley and Daniel paid for electricity in their apartment each month for the last 3 months.

| Monthly Expenses | | | | |
|---|---|---|---|---|
| Expense | February | March | April | May |
| Rent | $1,450 | $1,450 | $1,450 | $1,450 |
| Groceries | $354.91 | $451.08 | $377.17 | $401.56 |
| Cell phone bill | $78.72 | $78.72 | $78.72 | $78.72 |
| Electricity | $157.91 | $171.99 | $201.45 | $215.06 |

Which expenses were variable for Hayley and Daniel during these months?

A. Rent and Cell phone only

B. Electricity and groceries only

C. Groceries, rent and electricity

D. All of the expenses

3 A truck driver worked 8 hours each day for 5 days a week. The truck driver was paid $22 an hour. Which equation represents m, the total amount the truck driver was paid for the hours worked?

A. 8 x 5 x 22 = m
B. 8 x 5 = m
C. 22 + 5 x 8 = m
D. 22 x 8 = m

4 Katie bought 5 pounds of grass seed for her backyard. She used 55 ounces of the seed on Monday and put the rest in her garage to use the following week. How many ounces of grass seed does Katie have to use next week?

A. 35 ounces
B. 50 ounces
C. 80 ounces
D. 25 ounces

5 The number of football tickets sold at a high school stadium can be written in expanded notation, as shown.

$$(6 \times 1{,}000) + (7 \times 100) + (4 \times 1)$$

What is the number written in standard form?

A. 671
B. 617,141
C. 6,047
D. 6,704

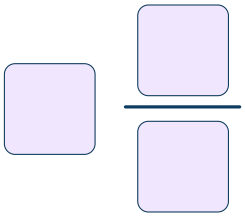
6 Patty bought a new video game controller for $45.31 and a game for $37.51. What was the total for the two items Patty bought?

A. $7.80
B. $72.82
C. $82.82
D. $67.68

7 The floor in a rectangular classroom has a length of 16 feet and a width of 18 feet. What is the area, in square feet, of the floor in the classroom?

A. 68 feet
B. 288 feet
C. 188 feet
D. 34 feet

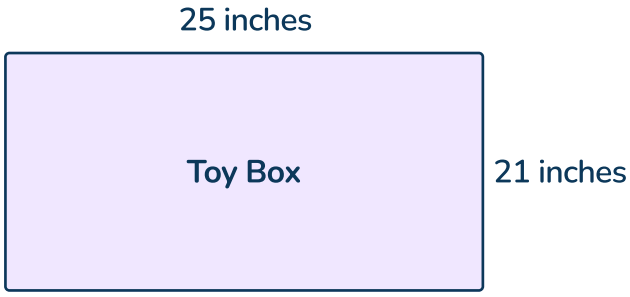
8 Write a mixed number that is equivalent to the decimal 6.78.



9 A bookstore has 24 bookshelves in its fiction section. Each bookshelf holds 37 books. How many books can the bookshelves hold?

A. 61 books
B. 888 books
C. 788 books
D. 240 books

10 Kaitlin is decorating the outside of her toy box with blue ribbon for her new baby brother. She drew a picture to help her plan how much blue ribbon she will need to complete the project.




How much blue ribbon will Kaitlin need to wrap the toy box?

A. 525 inches
B. 92 inches
C. 46 inches
D. 82 inches

11 Which fraction belongs in the ☐ to make this comparison true?

$$\frac{2}{5} > \square$$

A. $\frac{1}{2}$

B. $\frac{2}{3}$

C. $\frac{1}{6}$

D. $\frac{3}{4}$

12 Billy sold canned jam at the farmers market. The materials for the canned jam cost $43.76. At the end of the weekend, Billy made $205.92 on his canned jam. What was Billy's profit on the canned jam?

A. $249.68

B. $162.26

C. $162.16

D. $242.24

13 328 students are going on a field trip. They can enter the museum in groups of 8.

Create an equation that can be used to show how many groups went into the museum.

Use the options below to create the equation. Not all answers will be used.

| | | | |
|---|---|---|---|
| 328 ÷ 8 | 328 × 8 | 328 + 8 | 328 - 8 |
| 2,624 | 320 | 41 | 336 |

[ ] = [ ]

14 The stem-and-leaf plot shows the distances that Alex threw his paper airplane during a science experiment.

| Stem | Leaf |
|---|---|
| 2 | 0 5 |
| 3 | 0 0 7 |
| 4 | |

Key: 2 | 0 = 2.0

What is the total number of feet Alex threw his paper airplane?

A. 14.2 feet
B. 5 feet
C. 13.2 feet
D. 11.2 feet

**15** Which decimals are equal to the given fractions?
Select the correct answer for each box. Not all answer choices will be used.

| A. 4.106 | B. 4.6 | C. 4.06 | D. 46 | E. 0.46 | F. 0.046 |
|---|---|---|---|---|---|

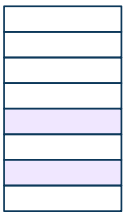
$4\frac{6}{100} =$ ( A ) ( B ) ( C ) ( D ) ( E ) ( F )

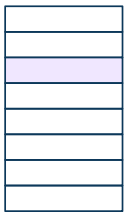
$4\frac{6}{10} =$ ( A ) ( B ) ( C ) ( D ) ( E ) ( F )

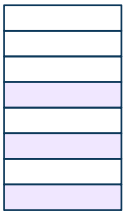
**16** After saving for 3 months, Corey saved $57.91. He spent $34.28 on a new wooden baseball bat. How much money does Corey have left over?

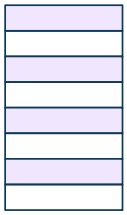
A. $23.77
B. $23.63
C. $92.19
D. $23.73

**17** The shapes are divided into equal parts. Which shape is $\frac{1}{4}$ shaded?

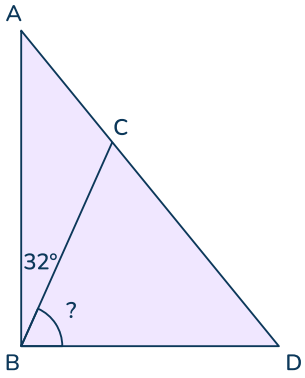
A. 

B. 

C. 

D. 

**18** The right triangle below is divided into two parts. The measure of angle ABC is 32 degrees. What is the measure of angle CBD?




A. 68 degrees
B. 148 degrees
C. 32 degrees
D. 58 degrees

**19** The table shows a relationship between input numbers and output numbers.

| Input | Output |
|---|---|
| 1 | 2 |
| 2 | 4 |
| 3 | 6 |
| 4 | 8 |

Which rule best describes the relationship between the input and output numbers?

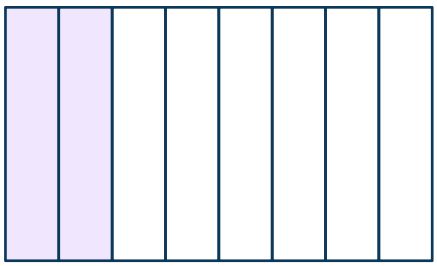
A. + 1

B. x 2

C. - 1

D. + 2

**20** Angela had a rectangle with 8 equal parts. She shaded 2 of them. Which fractions does Angela's rectangle show are equal?



A. $\frac{1}{8} = \frac{1}{4}$

B. $\frac{2}{8} = \frac{1}{4}$

C. $\frac{1}{8} = \frac{1}{2}$

D. $\frac{2}{8} = \frac{1}{2}$

**21** Which statements are true about the following number?

**75,098.16**

Select **TWO** correct answers.

- [ ] The digit 8 has a value of (8 x 10)
- [ ] The digit 6 has a value of (6 x 100)
- [ ] The digit 9 has a value of (9 x 10)
- [ ] The digit 5 has a value of (5 x 10,000)
- [ ] The digit 1 has a value of (1 x 0.1)

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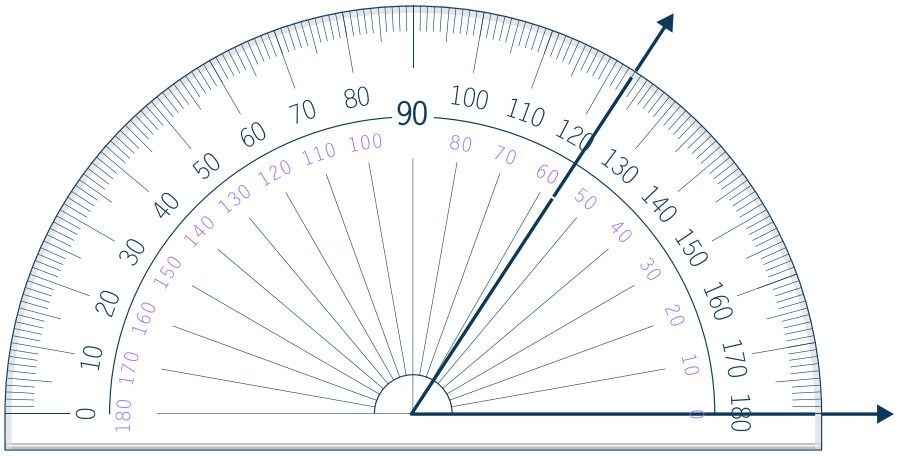
**22** What is the measure of the angle?




A. 123°
B. 180°
C. 57°
D. 63°

**23** Which number comparison is true?

A. One thousand eight hundred seven = (1 × 1,000) + (8 × 100) + (7 × 10)

B. (2 × 10,000) + (5 × 100) + (6 × 1) < twenty five thousand six

C. Eighteen thousand one hundred ninety < (1 × 1,000) + (1 × 800) + (1 × 100) + (9 × 10)

D. (3 × 1,000) + (8 × 100) + (4 × 10) < three thousand eight hundred four

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**24** Roberto made salsa. He ate $\frac{1}{8}$ of the salsa on Monday, $\frac{3}{8}$ of the salsa on Tuesday, and $\frac{2}{8}$ of the salsa on Wednesday. What fraction of the salsa was left after Wednesday?

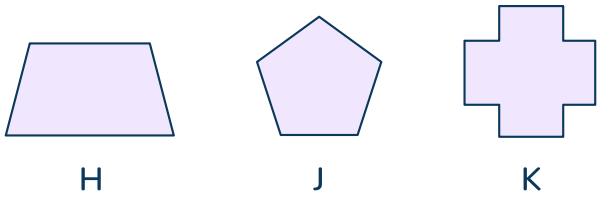
A. $\frac{1}{8}$

B. $\frac{2}{8}$

C. $\frac{5}{8}$

D. $\frac{6}{8}$

25 Which figures have both parallel and perpendicular sides?



H J K

A. Figure H
B. Figure J & K
C. Figure K
D. None of the figures

26 Which of the following numbers rounds to 800 when rounded to the nearest hundred?

A. 745
B. 901
C. 876
D. 785

27 Caleb needs $\frac{20}{8}$ inches of purple string and $7\frac{2}{3}$ of green string. Which comparison below is true?

A. None of these

B. $\frac{20}{8} > 7\frac{2}{3}$

C. $\frac{20}{8} < 7\frac{2}{3}$

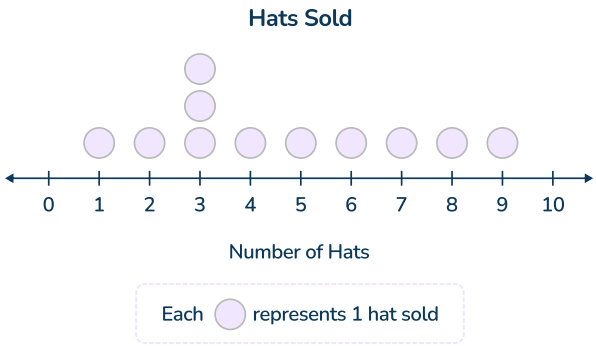
D. $\frac{20}{8} = 7\frac{2}{3}$

**28** The list shows the number of hats sold at a shopping booth each day for 10 days.

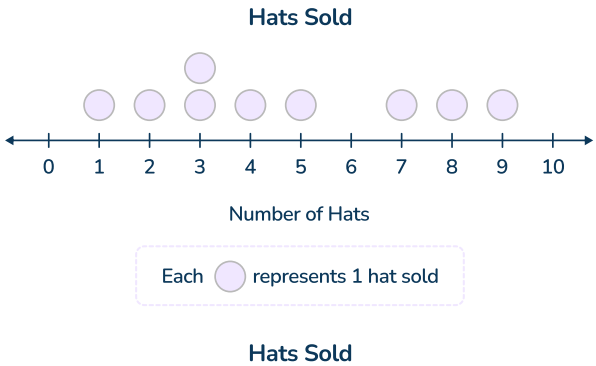
3 7 4 9 1 3 2 5 8 3

Which dot plot displays the same data?

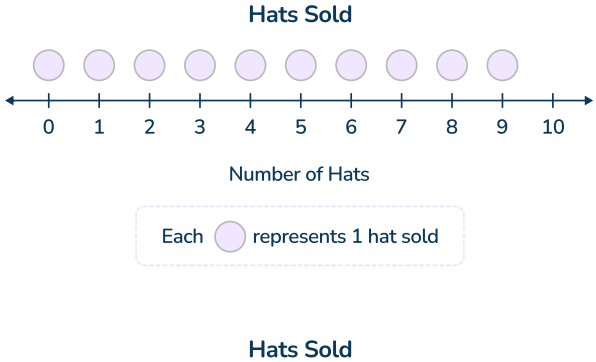
A.



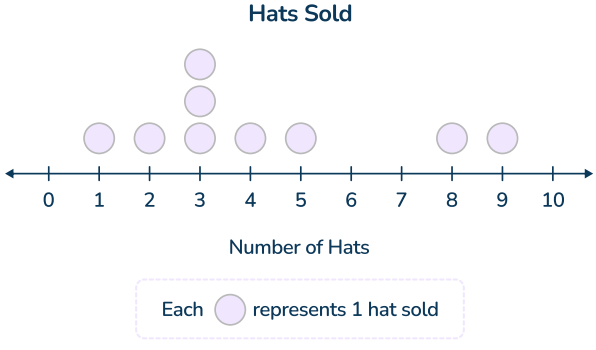

B.




C.



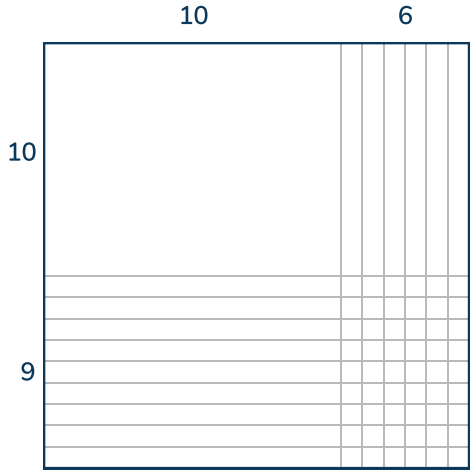

D.




Answer: .....

*1 mark*

**29** Which equation is represented by the area model?




A. 10 x 6 = 60

B. 16 x 19 = 304

C. 20 x 15 = 300

D. 10 x 9 = 90

Answer: .....

*1 mark*

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**30** Which process shows a correct way to add the fractions below?

$$\frac{6}{100} + \frac{3}{10}$$

A. $\frac{6}{100} + \frac{3}{10} = \frac{6+3}{100+10} = \frac{9}{110}$

B. $\frac{6}{100} + \frac{3}{10} = \frac{6+3}{100} = \frac{9}{100}$

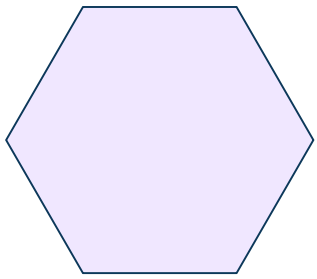
C. $\frac{6}{100} + \frac{30}{10} = \frac{6+30}{100+10} = \frac{36}{100}$

D. $\frac{6}{100} + \frac{30}{100} = \frac{6+30}{100} = \frac{36}{100}$

Answer: .....

*1 mark*

**31** How many lines of symmetry does the figure below have?



A. 2
B. 4
C. 6
D. 5

Answer: .....

*1 mark*

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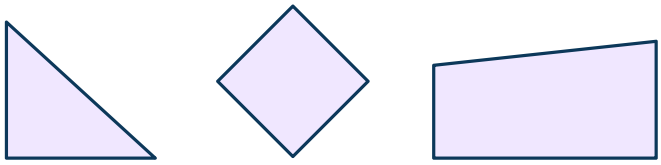
**32** What is the value of point X on the number line below?


A. 0.40
B. 0.47
C. 0.50
D. 0.53

Answer: .....

*1 mark*

**33** Gregory sorted figures into groups. The figures were sorted into the same group.



Which statement best describes the figures in this group?

A. Each figure has at least one pair of perpendicular sides.
B. Each figure has at least one acute angle.
C. Each figure has only one pair of parallel sides.
D. Each figure has only one obtuse angle.

Answer: .....

*1 mark*

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**34** Cameron drew 2 rectangles.

- Rectangle A has a perimeter of 24 units.
- Rectangle D has an area of 24 square units.

Which measurement could be the dimensions of each rectangle?
Select the correct answer for each box. Each answer may be used more than once. Not all answers will be used.

A. Length = 10 units
Width = 2 units
B. Length = 8 units
Width = 2 units
C. Length = 12 units
Width = 2 units
D. Length = 6 units
Width = 3 units

Rectangle A = (A) (B) (C) (D)

Rectangle D = (A) (B) (C) (D)

Answer: .....

*1 mark*

# Answers

| STAAR Answer Key - 4th Grade | | | | | |
|---|---|---|---|---|---|
| Item position | Item type | TEKS Alignment | Correct answer(s) | Reporting Category | Readiness or Supporting |
| 1 | Multiple choice | 4.1.2F | A | 1 | Supporting |
| 2 | Multiple choice | 4.4.10.A | B | 4 | Supporting |
| 3 | Multiple choice | 4.2.5.A | A | 2 | Readiness |
| 4 | Multiple choice | 4.3.8.C | D | 3 | Readiness |
| 5 | Multiple choice | 4.1.2.B | D | 1 | Readiness |
| 6 | Multiple choice | 4.2.4.A | C | 2 | Readiness |
| 7 | Multiple choice | 4.3.5.D | B | 3 | Readiness |
| 8 | Inline choice | 4.1.2.G | $6\frac{78}{100}$ | 1 | Readiness |
| 9 | Multiple choice | 4.2.4.D | B | 2 | Readiness |
| 10 | Multiple choice | 4.2.5.D | B | 3 | Readiness |
| 11 | Multiple choice | 4.2.3.D | C | 2 | Readiness |
| 12 | Multiple choice | 4.4.10.B | C | 4 | Supporting |
| 13 | Equation | 4.2.4.H | $328 \div 8 = 41$ | 2 | Readiness |
| 14 | Multiple choice | 4.4.9.B | A | 4 | Supporting |
| 15 | Multiple select | 4.1.2.G | 4.06, 4.6 | 1 | Readiness |
| 16 | Multiple choice | 4.2.4.A | B | 2 | Readiness |

| STAAR Answer Key - 4th Grade | | | | | |
|---|---|---|---|---|---|
| Item position | Item type | TEKS Alignment | Correct answer(s) | Reporting Category | Readiness or Supporting |
| 17 | Multiple choice | 4.1.3.A | A | 1 | Supporting |
| 18 | Multiple choice | 4.3.7.E | D | 3 | Supporting |
| 19 | Multiple choice | 4.2.5.B | B | 2 | Readiness |
| 20 | Multiple choice | 4.1.3.C | B | 1 | Supporting |
| 21 | Multiple select | 4.1.2.B | The digit 9 has a value of (9 x 10); The digit 1 has a value of (1 x 0.1) | 1 | Readiness |
| 22 | Multiple choice | 4.3.7.C | C | 3 | Readiness |
| 23 | Multiple choice | 4.1.2.C | B | 1 | Supporting |
| 24 | Multiple choice | 4.2.3.E | B | 2 | Readiness |
| 25 | Multiple choice | 4.3.6.D | C | 3 | Readiness |
| 26 | Multiple choice | 4.1.2.D | D | 1 | Supporting |
| 27 | Multiple choice | 4.2.3.D | C | 2 | Readiness |
| 28 | Multiple choice | 4.4.9.A | A | 4 | Readiness |
| 29 | Multiple choice | 4.1.4.C | B | 1 | Supporting |
| 30 | Multiple choice | 4.2.3.E | D | 2 | Readiness |
| 31 | Multiple choice | 4.3.6.B | C | 3 | Supporting |

| STAAR Answer Key - 4th Grade | | | | | |
|---|---|---|---|---|---|
| Item position | Item type | TEKS Alignment | Correct answer(s) | Reporting Category | Readiness or Supporting |
| 32 | Multiple choice | 4.1.2.H | B | 1 | Supporting |
| 33 | Multiple choice | 4.3.6.D | A | 3 | Readiness |
| 34 | Hot text | 4.3.5.D | Rectangle A: length 10 units, width 2 units<br>Rectangle D: length 12 units, width 2 units | 3 | Readiness |

# Rationales

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 1 | A is correct | To determine which of the statements is true, the student likely labeled each hundred grids correctly and identified that 0.47 is larger than 0.36. |
| | B is incorrect | The student does not have an understanding of the meaning of the comparison symbols, and incorrectly compared the two decimals. |
| | C is incorrect | The student does not have an understanding of the meaning of the comparison symbols, and incorrectly compared the two decimals. |
| | D is incorrect | The student likely did not connect the visual models with the decimal in numeral form. The student needs to focus on understanding how to interpret models used to represent tenths and hundredths. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 2 | A is incorrect | Students likely confused the definition of variable and fixed expenses. Both of these expenses stay the same through the month. |
| | B is correct | Variable expenses are expenses that change each month. Groceries and electricity were a different amount each month. |
| | C is incorrect | Students likely saw that the first expense listed was variable and picked this answer without reading through the entire answer choice. |
| | D is incorrect | Students likely have a misconception or are not familiar with the different types of expenses. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 3 | A is correct | The student has an understanding that in order to find m, you must multiply the number of hours worked by the number of days. Then multiply by the amount the truck driver was paid each hour. |
| | B is incorrect | The student likely chose this answer because they understood you needed to find the total hours worked, but stopped too soon before finding the value of m. |
| | C is incorrect | The student likely was unsure how to solve for m and selected this answer. |
| | D is incorrect | This equation represents the amount of money the truck drive made each day, but stopped before finding the total value of m. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 4 | A is incorrect | The student correctly converted the 5 pounds into 80 ounces. They then subtracted incorrectly, not regrouping when subtracting in the ones place. |
| | B is incorrect | The student subtracted 55 ounces - 5 pounds, not converting the numbers into similar units. |
| | C is incorrect | The student correctly converted the 5 pounds into 80 ounces, but did not complete the second step to solve the amount of ounces remaining. |
| | D is correct | The student correctly converted the 5 pounds into 80 ounces. They then subtracted 80 ounces - 55 ounces to find the answer, 25 ounces. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 5 | A is incorrect | Students may choose A if they struggle with placeholder zeros in the middle of numbers. There are no tens in the tens place, so a zero should be placed there, not left out. |
| | B is incorrect | Students may choose B if they have misconceptions about how to read and use expanded notation. The student used the first digit of each number from the expanded notation. |
| | C is incorrect | Students may choose C if they have an understanding of reading and writing numbers, but mixed up the order the digits were to be in. |
| | D is correct | This answer choice correctly shows the number written in standard form. 6,704 = 6,000 + 700 + 4, or (6 x 1,000) + (7 x 100) + (4 x 1) |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 6 | A is incorrect | The student likely subtracted the two numbers instead of adding. The student needs to focus on the meaning of math symbols. |
| | B is incorrect | The student lined up the two numbers correctly and added correctly through the tenths place. The student did not note the regrouping after adding the ones place. |
| | C is correct | To determine the solution, the student has an understanding of adding decimals with regrouping. |
| | D is incorrect | The student likely does not have a good grasp on adding decimals with regrouping. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 7 | A is incorrect | The student most likely calculated the perimeter of the classroom, by adding the length and width twice, and not calculating the area. |
| | B is correct | The student correctly multiplied the length, 16 feet, times the width, 18 feet, to find the area of the classroom. |
| | C is incorrect | The student likely correctly identified the operation as multiplication, but forgot to add in the regrouped hundred when adding the partial products. |
| | D is incorrect | The student was unsure how to solve the problem, and defaulted to using addition instead of multiplication. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 8 | 6, 78, 100 | To determine a mixed number that is equivalent to 6.78, the student should have kept the whole number of 6. They then should have converted 0.78 into a fraction. 0.78 should be rewritten as $\frac{78}{100}$ |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 9 | A is incorrect | The student likely had difficulty determining what operation to use and defaulted to using addition. |
| | B is correct | To determine the amount of books the bookshelves could hold, the student had an understanding of multiplying using strategies. |
| | C is incorrect | The student likely used an appropriate multiplication strategy, but made a mistake and added the digits in the hundreds place incorrectly. |
| | D is incorrect | The student likely used an appropriate multiplication strategy, but when multiplying 30 x 4, wrote 12, instead of 120. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 10 | A is incorrect | The student likely used the area formula instead of the perimeter formula. |
| | B is correct | To determine the amount of blue ribbon needed, the student will need to recognize that they will calculate the perimeter of the toy box, l + l + w + w. |
| | C is incorrect | The student likely determined the need to use the perimeter formula, but only added the length and width once. |
| | D is incorrect | The student likely determined the need to use the perimeter formula, but made an error when adding up the four sides. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 11 | A is incorrect | The fraction $\frac{2}{5}$ is a fraction less than $\frac{1}{2}$, because 2 is less than half of 5. |
| | B is incorrect | The fraction $\frac{2}{3}$ is a fraction greater than $\frac{1}{2}$. The fraction $\frac{2}{5}$ is a fraction less than $\frac{1}{2}$, because 2 is less than half of 5. |
| | C is correct | The fraction $\frac{1}{6}$ is smaller than $\frac{2}{5}$, because the pieces of a sixth are smaller than the pieces of a fifth. |
| | D is incorrect | The fraction $\frac{3}{4}$ is a fraction greater than $\frac{1}{2}$. The fraction $\frac{2}{5}$ is a fraction less than $\frac{1}{2}$, because 2 is less than half of 5. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 12 | A is incorrect | The student likely added the materials and money made from the sales together. |
| | B is incorrect | The student lined up the two numbers correctly and subtracted correctly through the tenths place. The student did not take note of the regrouping when subtracting. |
| | C is correct | The student correctly calculated the profit, by subtracting the materials cost from the total made from the sales. 205.92 - 43.76 = $162.16 |
| | D is incorrect | The student likely does not have a firm understanding of what subtraction is and when to regroup numbers. The student likely subtracted the smaller number from the larger number, regardless of its location within the equation. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 13 | $328 \div 8 = 41$ | The student should have decided to divide the total number of students (328) by the number of students in each group (8), resulting in $328 \div 8 = 41$ . |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 14 | A is correct | The student used appropriate adding strategies to add up 2 + 2.5 + 3 + 3 +3.7 = 14.2 feet. |
| | B is incorrect | The student most likely counted how many times Alex threw his airplane versus finding the total distance. |
| | C is incorrect | The student most likely made an error when regrouping the tenths, forgetting to add in the regrouped 1 in the ones place. |
| | D is incorrect | The student misadded the decimals, forgetting one of the 3 feet measurements. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 15 | 4.06, 4.06 | Students should have answered $4\frac{6}{100} = 4.06$ and $4\frac{6}{100} = 4.6$. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 16 | A is incorrect | The student likely lined the numbers up correctly, however, instead of regrouping a tenth to the hundredths place, the student subtracted 8 - 1, then continued subtracting. |
| | B is correct | To determine the difference, the student should have aligned the numbers, then subtracted 34.28 from 57.91. |
| | C is incorrect | The student likely added the two numbers instead of subtracting. |
| | D is incorrect | The student likely lined up the numbers correctly and regrouped a tenth into hundredths. They likely didn't note that there were only 8 tenths left, and subtracted 9-2. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 17 | A is correct | To determine the answer to this question, students need to realize that the whole is broken up into 8 pieces, and then need to figure out how many are in each group if they split it into 4 equal groups. Two eighths are equal to one fourth. |
| | B is incorrect | Students may choose this answer if they mistakenly assume that only one piece needs to be shaded out of the total number of pieces, without realizing that there are 8 pieces instead of 4. |
| | C is incorrect | Students may choose this answer if they mistakenly equate 3 eighths to one fourth. |
| | D is incorrect | Students may choose this answer if they think four pieces need to be shaded, going by the denominator instead of the numerator. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 18 | A is incorrect | The student made an error while subtracting 32 degrees from 100 degrees, not understanding that a right angle equals 90 degrees. |
| | B is incorrect | The student subtracted 32 degrees from 180, the measurement of a straight angle, not a right angle. |
| | C is incorrect | The student was unsure about how to solve this problem and picked the angle that was identified in the picture. |
| | D is correct | The student correctly found the missing angle measurement by subtracting 32 degrees from 90 degrees, the measure of the angle in the right triangle. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 19 | A is incorrect | Students may choose this answer if they only look at the first several numbers in the set instead of looking at the entire set of numbers. |
| | B is correct | B is correct - you have to multiply by 2. |
| | C is incorrect | Students may know not to make the mistake of only looking at the first number. They may assume that 2 - 1 = 1, so C is the correct answer. |
| | D is incorrect | Students may choose this answer choice if they only look at the 2nd input on the table. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 20 | A is incorrect | Students may choose this answer if they assume equivalence based on the same denominators. |
| | B is correct | To determine this answer, students need to recognize that 2 eighths are shaded in the rectangle, and that is the same as 1 fourth because there are 4 groups of 2 eights in the whole, and one of those groups is shaded. |
| | C is incorrect | Students may choose this answer if they assume equivalence based on the same denominators. |
| | D is incorrect | Students may choose this answer if they assume equivalence based on the fact that there is a 2 in each fraction. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 21 | The digit 9 has a value of (910);<br>The digit 1 has a value of (10.1) | Students should identify that the digit 9 is in the tens place and the digit 1 is in the tenths place. The answer is expected to be presented in expanded notation, where the digit is multiplied by the value of the place. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 22 | A is incorrect | Students reading the protractor incorrectly may read the angle as 123°, but it is not an obtuse angle. |
| | B is incorrect | Students may see the bottom line pointing to the 180° and incorrectly choose that as the angle's measurement. |
| | C is correct | Students reading the protractor correctly will see that it is an acute angle and will use the horizontal line pointing to the zero as the starting point, then use the protractor to measure between the two lines of the angle, in which they will get 57°. |
| | D is incorrect | Students may realize they need to use the blue numbers to measure this angle, but may incorrectly read the measurement as 3° greater than 60° rather than 3° less than 60°. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 23 | A is incorrect | Students may choose this answer if they mistakenly read the expanded form as 7 ones instead of 7 tens. |
| | B is correct | This answer is correct - The number on the left represents 20,506, which is less than the number on the left, 25,006. |
| | C is incorrect | This answer is incorrect as the number on the left, 18,190, is greater than the number on the right, 1,990. Students may not notice that hundreds are shown twice in the number on the right. |
| | D is incorrect | Students may not realize that the expanded form shows 4 tens while the written form shows four ones - so the number on the left, 3,840 is greater than the number on the right, 3,804. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 24 | A is incorrect | Students may choose this answer if they add all the parts and accidentally get 7 eighths, leaving $\frac{1}{8}$ remaining rather than 2 eighths |
| | B is correct | To determine this answer, students must add all the fractions in the problem ( $\frac{1}{8}+\frac{3}{8}+\frac{2}{8}=\frac{6}{8}$) and subtract this from one whole, leaving them with 2 eighths. |
| | C is incorrect | Students may choose this answer if they add $\frac{3}{8}+\frac{2}{8}$ and stop. |
| | D is incorrect | Students may choose this answer if they add all the fractions in the problem, not realizing that the question is asking for how much is left rather than the total amount eaten. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 25 | A is incorrect | The student likely looked at figure H and determined that the top and bottom line were parallel, however, figure H does not have a pair of perpendicular lines. |
| | B is incorrect | The student determined that figure K has both parallel and perpendicular lines, but incorrectly identified figure J as having both. J does not have a pair of parallel or perpendicular lines. |
| | C is correct | To determine which of the figures have both parallel and perpendicular lines, the student should have recognized that each figure has at least one pair of perpendicular sides and one pair of parallel lines. |
| | D is incorrect | The student needs to focus on understanding how to compare the attributes of two-dimensional figures, as figure K makes the statement true. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 26 | A is incorrect | 745 rounded to the nearest hundred is 700. Student has likely looked at the ones column when rounding, not the tens. |
| | B is incorrect | 901 rounded to the nearest hundred is 900. Student has identified the number has been rounded down but has misunderstood how to round down (identifying 800 and 1,000 as the next and previous multiples of one hundred) |
| | C is incorrect | 876 rounded to the nearest hundred is 900. Student has likely assumed that this rounds to 800 as the hundreds digit is 8. |
| | D is correct | 785 rounded to the nearest hundred is 800. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 27 | A is incorrect | The student likely selected this question because they have a misconception or are unsure how to compare the two given fractions. |
| | B is incorrect | The student likely incorrectly changed the improper fraction into a mixed number. |
| | C is correct | The student correctly converted the improper fraction $\frac{20}{3}$ into a mixed number, $6\frac{2}{3}$. Once the improper fraction had been changed into a mixed number, the student should see that $\frac{20}{3} < 7\frac{2}{3}$. |
| | D is incorrect | The student likely incorrectly changed the improper fraction into a mixed number. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 28 | A is correct | The student correctly identified the plot diagram that matched the given data. |
| | B is incorrect | The student likely chose this answer because they missed one of the data points (3). |
| | C is incorrect | The student likely chose this answer choice due to a misconception of how to use a plot diagram. |
| | D is incorrect | The student likely chose this answer because they missed one of the data points (7). |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 29 | A is incorrect | This answer choice represents the equation used to find the factor at the top of the area model. |
| | B is correct | The student selected the correct equation to represent the given area model. You add the top numbers to get the first factor (10 + 6 = 16) and the numbers on the left to get the second factor (10 + 9 = 19) |
| | C is incorrect | The student likely added the two numbers representing the tens place as one factor and the two numbers representing the ones place and the second factor. |
| | D is incorrect | This answer choice represents the equation used to find the factor on the left of the area model. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 30 | A is incorrect | Students may choose this answer if they think that the answer is solved by adding the numerators together and the denominators together. |
| | B is incorrect | Students may choose this answer if they think that $\frac{3}{10}$ is equal to $\frac{3}{100}$ or by thinking that they need to add the numerators and keep the larger denominator. |
| | C is incorrect | Students may choose this answer if they think that $\frac{3}{10}$ is equal to $\frac{30}{10}$ |
| | D is correct | To determine this answer, students need to create an equivalent fraction for $\frac{3}{10}$ with denominator 100 and then add the numerators. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 31 | A is incorrect | The student was unable to identify all lines of symmetry, or did not understand how to find lines of symmetry. |
| | B is incorrect | The student was unable to identify all lines of symmetry, or did not understand how to find lines of symmetry. |
| | C is correct | The student was able to correctly identify 6 lines of symmetry, or understood that all regular polygons have the same number of sides and lines of symmetry. |
| | D is incorrect | The student was unable to identify all lines of symmetry, or did not understand how to find lines of symmetry. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 32 | A is incorrect | Students may choose this answer if they think that because the X isn't quite 0.50, it would be the closest labeled mark on the number line below it. |
| | B is correct | To determine the answer, the student would need to realize that each tick mark represents 0.01 and it is 0.07 greater than 0.40 and 0.03 less than 0.50. |
| | C is incorrect | Students may choose this answer because the X is closest to 0.50 and they may think they need to round up. |
| | D is incorrect | Students may choose this answer if they realize that X is 0.03 away from 0.50, but is 0.03 less than 0.50, not greater. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 33 | A is correct | The student should have recognized that each figure has at least one pair of perpendicular sides. |
| | B is incorrect | The student likely looked at the first two figures and determined that the angle in the bottom and on the right is an acute angle. |
| | C is incorrect | The student likely looked at the third figure and determined that it had only one pair of parallel sides. |
| | D is incorrect | The student likely looked at the third figure and determined that the angle in the top left is an obtuse angle. |

| 4th Grade STAAR Practice Rationales | | |
|---|---|---|
| Item | KEY | Rationale |
| 33 | Rectangle A | A |
| | Rectangle D | C |

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