



**THIRD SPACE
LEARNING**

Error Analysis

Fractions

5th Grade

Instructions

A student has been given a set of questions to answer. They tried their best but think they have got some answers wrong.

Go through the work and check the answers. Help the student understand their errors by explaining what they did wrong or how to find the correct answer (there are prompts below the questions to help you).

Note that you will not always be asked to provide the correct answer.

- 1 Write this fraction in its simplest form.

$$\frac{12}{36}$$

$$\frac{6}{6}$$

This answer is: ☐ Correct ☐ Incorrect

If incorrect, what is the simplest form of this fraction?

- 2 Solve the equation.

$$\frac{5}{6} + \frac{3}{5} =$$

$$\frac{8}{30} \text{ or } \frac{4}{15}$$

This answer is: ☐ Correct ☐ Incorrect

If incorrect, what is the answer in its simplest form?

3 Solve the equation.

$$4 \times 2\frac{4}{7} =$$

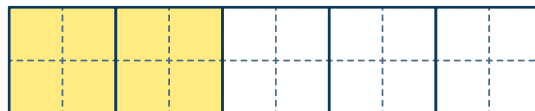
$$10\frac{2}{7}$$

This answer is: ☐ Correct ☐ Incorrect

Prove this answer is correct or incorrect.

4 Solve the equation.

$$\frac{2}{5} \div 4 =$$



$$\frac{8}{20}$$

This answer is: ☐ Correct ☐ Incorrect

If incorrect, what should the answer be?

5 Find $\frac{4}{5}$ of 135.

$$27$$

This answer is: ☐ Correct ☐ Incorrect

Explain how to find a fraction of an amount.

6 $4\frac{2}{7} \times 3 =$

$$\frac{2}{7} \times 3 = \frac{6}{7}$$

$$4 + \frac{6}{7} = 4\frac{6}{7}$$

This answer is: ☐ Correct ☐ Incorrect

$$4\frac{6}{7}$$

Explain how to multiply a mixed number by an integer.

7 $\frac{2}{8} \times 4 =$



$$\frac{2}{8}$$



$$\frac{2}{8}$$



$$\frac{2}{8}$$



$$\frac{2}{8}$$

This answer is: ☐ Correct ☐ Incorrect

$$\frac{8}{32}$$

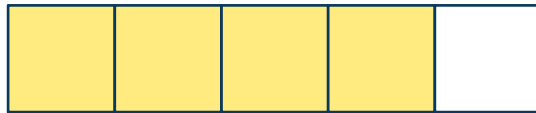
If incorrect, explain the error.

8 $\frac{3}{5}$ of 18 = 30

This answer is: ☐ Correct ☐ Incorrect

Is the answer reasonable? Explain your answer.

9 $\frac{1}{5} \times 4 =$



4

This answer is: ☐ Correct ☐ Incorrect

Explain how to use a bar model to multiply a unit fraction by an integer.

10 $\frac{3}{10}$ of 60 =

18

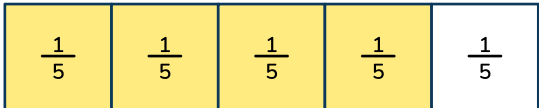
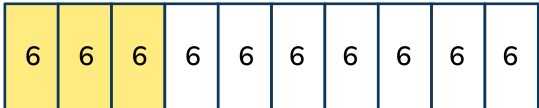
This answer is: ☐ Correct ☐ Incorrect

Prove the answer is right or wrong.

Answers

Question Number	Question	Answer
1	Write this fraction in its simplest form. $\frac{12}{36}$ Given answer: $\frac{6}{6}$ If incorrect, what is the simplest form of this fraction?	Incorrect The given answer shows a misunderstanding of simplifying fractions. Either the numerator (12) has been halved and the result has been used as the numerator and denominator or the denominator has been divided by 6 and the divisor (6) has been used as the numerator. This demonstrates a misunderstanding of how to simplify fractions. Correct answer: $\frac{1}{3}$
2	Solve the equation. $\frac{5}{6} + \frac{3}{5} =$ Given answer: $\frac{8}{30}$ or $\frac{4}{15}$ If incorrect, what is the answer in its simplest form?	Incorrect The answer shows an understanding of the need to find equivalent fractions with a common denominator. However, the answer given is incorrect. The answer shows that while the denominators were adjusted to find common denominators, the numerators were not adjusted to find accurate equivalent fractions. Correct answer: $\frac{43}{30}$ or $1\frac{13}{30}$
3	Solve the equation. $4 \times 2\frac{4}{7} =$ Given answer: $10\frac{2}{7}$ Prove this answer is correct or incorrect.	Correct Proof: $2\frac{4}{7} = \frac{18}{7}$ $\frac{18}{7} \times 4 = \frac{72}{7} = 10\frac{2}{7}$

Question Number	Question	Answer
4	Solve the equation. $\frac{2}{5} \div 4 =$ Given answer: $\frac{8}{20}$ If incorrect, what should the answer be?	Incorrect The student's work shows an attempt to use a diagram to find an answer. The diagram shows splitting each section into four parts and counting all the parts colored in. While this diagram is useful, it has not resulted in the correct answer. Correct answer: $\frac{1}{10}$
5	Find $\frac{4}{5}$ of 135. Given answer: 27 Explain how to find a fraction of an amount.	Incorrect The answer shows $\frac{1}{5}$ of 135. To find $\frac{4}{5}$ of 135, one-fifth of 135 can be multiplied by 4 or one-fifth of 135 can be subtracted. Both answers would give the correct answer. Correct answer: 108
6	$4\frac{2}{7} \times 3 =$ Given answer: $4\frac{6}{7}$ Explain how to multiply a mixed number by an integer.	Incorrect The mixed number has not been multiplied by the integer correctly. Only the fraction has been multiplied by 3. Correct answer: $12\frac{6}{7}$ $\frac{2}{7} \times 3 = \frac{6}{7}$ $4 \times 3 = 12$ $12 + \frac{6}{7} = 12\frac{6}{7}$
7	$\frac{2}{8} \times 4 =$ Given answer: $\frac{8}{32}$ If incorrect, explain the error.	Incorrect The bar model has been used to visualise the calculation. The answer shows a misunderstanding of the denominator. The total number of parts in the whole has not changed so the denominator has not changed. Correct answer: $\frac{8}{8}$ or 1

Question Number	Question	Answer
8	$\frac{3}{5}$ of = 30 Given answer: 18 Is the answer reasonable? Explain your answer.	Incorrect The answer is not reasonable because the value is smaller than 30, but should be bigger. The answer has been calculated by dividing 30 by the denominator (5) and multiplying by the numerator (3). To find the missing total, 30 should have been divided by the numerator then multiplied by the denominator. Correct answer: 50
9	$\frac{1}{5} \times 4 =$ Given answer: 4 Explain how to use a bar model to multiply a unit fraction by an integer.	Incorrect The bar model shows an understanding of how to divide the whole into five equal parts with four equal parts shaded. The answer shows that the whole has not been shaded, therefore the answer of 4 wholes is unreasonable. Correct answer: $\frac{4}{5}$ 
10	$\frac{3}{10}$ of 60 = Given answer: 18 Prove the answer is right or wrong.	Correct 

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-  Aligned to your state's standards
-  Scaffolded learning to close gaps

“We just had our first session and it went great! The kids really liked it and felt like they were learning! One even said he finally felt like math was making sense.”



Michelle Craig, Instructional Coach,
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