FLORIDA INVADED BY PYTHONS

Rubric and Sample Responses

Question 1

RUBRIC

Score	Description
1	Response demonstrates understanding of plotting points on a coordinate grid.
0	The student's response is mostly or all incorrect.

SAMPLE RESPONSE

The pythons returned to the places where they were captured.

Question 2

RUBRIC

Score	Description
2	Response demonstrates understanding of adding and dividing fractions. (1 point for each correct answer.)
1	Response demonstrates partial understanding of adding and dividing fractions.
0	The student's response is mostly or all incorrect.

SAMPLE RESPONSE

The average weight is 109 $\frac{59}{288}$ pounds (or 109 $\frac{1}{5}$ pounds).

The average length is 142 $\frac{5}{9}$ inches.

Question 3

RUBRIC

Score	Description
5	Response demonstrates thorough understanding of adding and dividing fractions. • Student thoroughly explains how to add fractions. (4 points) • Student thoroughly explains how to divide a fraction by the whole number. (2 points)
4	Response demonstrates strong understanding of adding and dividing fractions.
3	Response demonstrates general understanding of adding and dividing fractions.
2	Response demonstrates partial understanding of adding and dividing fractions.
1	Response demonstrates limited understanding of adding and dividing fractions.
0	The student's response is mostly or all incorrect.

SCORING NOTES

Adding Fractions

- 1 point for finding a common denominator
- 1 point for how to change a fraction to an equivalent fraction with the common denominator
- 1 point for how to add fractions with common denominators.
- 1 point for reducing the fraction.

Dividing Fractions

- 1 point for inverting and multiplying
- 1 point for reducing the fraction

SAMPLE RESPONSE

First, I added all the numbers. To add the fractions, I had to find a common denominator. The least common denominator is 24. So, I changed all the fractions to equivalent fractions with 24 as the bottom number. For example, $\frac{1}{12}$ is the same as $\frac{2}{24}$. I divided 24 by 12 and got 2. So, I multiplied both the top and bottom numbers in $\frac{1}{12}$ by 2 to get $\frac{2}{24}$. Once all the fractions had the same bottom numbers, I added the top numbers to get $\frac{136}{24}$, which reduces to 5 $\frac{16}{24}$ or 5 $\frac{2}{3}$.

To divide $\frac{2}{3}$ by 9, I inverted 9 to $\frac{1}{9}$. Then I multiplied to get $\frac{2}{27}$.

NOTE: If student explains how to find the average weight, do not penalize. Evaluate the response accordingly.

Question 4

RUBRIC

Score	Description
2	Response demonstrates understanding that a fraction may be interpreted as a division problem and the result yields a decimal or whole number value.
1	Response demonstrates partial understanding that a fraction may be interpreted as a division problem and the result yields a decimal or whole number value.
0	The student's response is mostly or all incorrect.

SAMPLE RESPONSE

First, I changed the fractions in the weight and length measurements to decimals. I used a calculator to divide the top number of the fraction by the bottom number. That changes the fraction into a decimal. Then, I divided the decimal weight by the decimal length.

Question 5

RUBRIC

Score	Description
6	Response demonstrates thorough understanding of adding and dividing fractions. • All fractions are correctly converted to equivalent fractions. (4 points) • Division is correctly executed. (1 point) • Answer is reduced to a mixed number with a fraction in simplest form. (1 point)
5	Response demonstrates strong understanding of adding and dividing fractions.
4	Response demonstrates general understanding of adding and dividing fractions.
3	Response demonstrates partial understanding of adding and dividing fractions.
2	Response demonstrates some understanding of adding and dividing fractions.
1	Response demonstrates little understanding of adding and dividing fractions.
0	The student's response is mostly or all incorrect.

SAMPLE RESPONSE

$2\frac{24}{40} + 2\frac{35}{40} + 2\frac{25}{40} + 2\frac{10}{40} = 8\frac{94}{40} = 10\frac{7}{20}$

$\frac{207}{20} \times \frac{1}{40} = \frac{207}{800}$

OR

$2\frac{24}{40} + 2\frac{35}{40} + 2\frac{25}{40} + 2\frac{10}{40} = 8\frac{94}{40} = 10\frac{7}{20}$

$10 \div 40 = \frac{10}{40} = \frac{1}{4}$

$\frac{7}{20} \times \frac{1}{40} = \frac{7}{800}$

$\frac{7}{800} + \frac{200}{800} = \frac{207}{800}$

Question 6

RUBRIC

Score	Description
3	Response demonstrates thorough understanding of multiplying a mixed number by a whole number. • Multiplication is correct. (2 points) • Answer is reduced to a mixed number with the fraction in simplest form. (1 point)
2	Response demonstrates strong understanding of adding and dividing fractions.
1	Response demonstrates general understanding of adding and dividing fractions.
0	The student's response is mostly or all incorrect.

SAMPLE RESPONSE

109 $\frac{1}{3}$ x 5 = 545 $\frac{5}{3}$ = 546 $\frac{2}{3}$ pounds

Question 7

RUBRIC

Score	Description
3	Response demonstrates thorough understanding of multiplying a fraction number by a whole number. • Multiplication is correct. (2 points) Award 1 point if student approaches the problem correctly and makes a computational error. • Answer is reduced to a mixed number with the fraction in simplest form. (1 point)

SAMPLE RESPONSE

5 x 34 x 70,000 x $\frac{3}{5}$ = 7,140,000

Question 8

RUBRIC

Score	Description
4	Response demonstrates thorough understanding of the environmental implications behind the mathematics of python reproduction rates and food intake.
3	Response demonstrates general understanding of the environmental implications behind the mathematics of python reproduction rates and food intake.
2	Response demonstrates partial understanding of the environmental implications behind the mathematics of python reproduction rates and food intake.
1	Response demonstrates limited understanding of the environmental implications behind the mathematics of python reproduction rates and food intake.
0	The student's response is mostly or all incorrect.