

Use the Idea Development rubric to work with a partner and discuss the score you believe these three samples should receive.

Your Problem/Question: A 2 inch by 3 inch picture needs to be enlarged so that the length of one side is 4 inches, what does the other side have to be in order to keep the picture from looking distorted?

Student response #1: To enlarge a picture and keep the picture from looking distorted I decided to increase the photo. So, I multiplied both numbers by 2 and came up with a picture that is 4 by 6. I also could have made the other side a 4 inch side by multiplying by $1\frac{1}{3}$. If I did that then the new picture would be $2\frac{2}{3}$ by 4. Since the directions didn't say which side needed to be 4 either of these answers would work. It also doesn't say which side is the height and which is the width, so there are four choices. The picture could be 4 tall by 6 wide, 6 tall by 4 wide, $2\frac{2}{3}$ tall by 4 wide, or 4 tall by $2\frac{2}{3}$ wide. If the picture is of a person then one size might be better than the other because some people are taller than others. Also, you might want a small picture because there are a lot of words on the page. If you chose the picture where you multiplied by a fraction, it would be harder to get because fractions are harder to use.

SCORE _____

WHY?

Student response #2: To enlarge the picture, the new measurements need to be 4 by 5. To do this I figured if the picture is 2 by 3 to start with then I need to make sure that one of the sides is 4 after it is enlarged. So I decided to make the 2 inch side a 4 inch side by adding two more inches. So when the picture is in the book, it will be either 4 inches tall and 5 inches wide, or it will be 5 inches tall and 4 inches wide. A rectangle has the same dimensions if you turn it on its side or lay it flat, so the problem has two answers - 4 inches tall and 5 inches wide, or 5 inches tall and 4 inches wide.

SCORE _____

WHY?

Student response #3: To enlarge the picture and keep it from looking distorted I decided to use a proportion so that both sides increase in exactly the same way; otherwise, one side will be more stretched than the other. I set up the proportion as:

$$\frac{2 \text{ wide}}{3 \text{ tall}} = \frac{4 \text{ wide}}{\text{unknown tall}}$$

In order to get from 2 wide to 4 wide, you have to multiply by 2, so you would have to do the same to the bottom or the fractions aren't equal anymore. That makes the new picture 4 wide by 6 tall. $\frac{2}{3}$ equals $\frac{4}{6}$ if you reduce to lowest terms.

SCORE _____

WHY?