

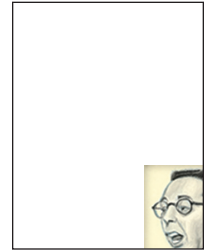
The Photocopy Faux Pas

Burnell has a new job at a copy center helping people use the photocopier machines. Burnell thinks he knows everything about making photocopies, and so he didn't complete his assignment to read the training manual.

Mr. and Mrs. Donahue are making a scrapbook for Mr. Donahue's grandfather's 75th birthday party, and they want to enlarge a sketch of their grandfather which was drawn when he was in World War II. They have purchased some very expensive scrapbook paper, and they would like this image to be centered on the page. Because they are unfamiliar with the process of enlarging an image, they have come to Burnell for help.

"We would like to make a copy of this image that is twice as big, and centered in the middle of this very expensive scrapbook paper," Mrs. Donahue says. "Can you help us with that?" "Certainly," says Burnell. "Glad to be of service."

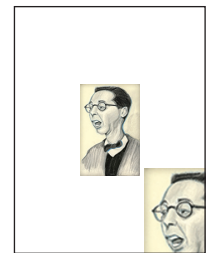
Burnell taped the original image in the middle of a white piece of paper, placed it on the glass of the photocopier machine, inserted the expensive scrapbook paper into the paper tray, and set the enlargement feature at 200%. In a moment, this image was produced.



"You've ruined our expensive paper," cried Mrs. Donahue. "Much of the image is off the paper instead of being centered." "And this image is more than twice as big," Mr. Donahue complained. "One-fourth of grandpa's picture is taking up as much space as the original."

In the diagram below, both the original image—which Burnell taped in the middle of a sheet of paper—and the copy of the image have been reproduced in the same figure.

1. Explain how the photocopier machine produced the partial copy of the original image.
2. Using a "rubber band stretcher," finish the rest of the enlarged sketch.
3. Where should Burnell have placed the original image if he wanted the final image to be centered on the paper?
4. Mr. Donahue complained that the copy was four times bigger than the original. What do you think? Did Burnell double the image or quadruple it? What evidence would you use to support your claim?
5. Transforming a figure by shrinking or enlarging it in this way is called a *dilation*. Based on your thinking about how the photocopy was produced, list all of the things you need to pay attention to when dilating an image.



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