

Scale Factor

NAME _____

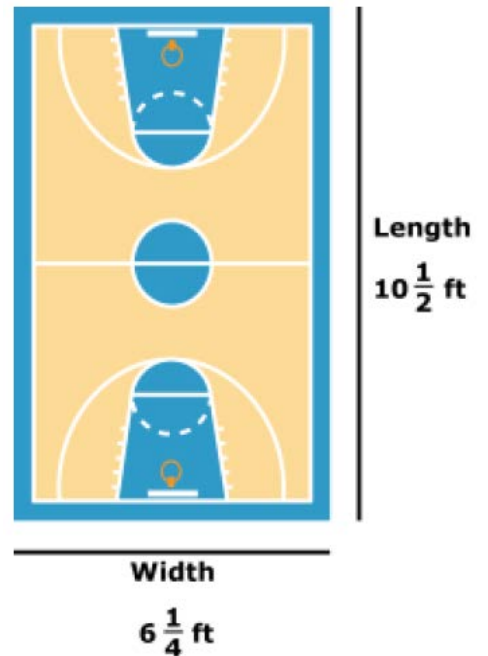
Scale factor is a way of describing the comparison between two similar figures.

For example saying that the scale factor applied to a figure is 2, is the same as saying that the scale is 2 to 1, $2 = 1$, or 2:1. The table below illustrates this idea...

| Scale Factor | Other Ways to Illustrate the Scale Factor | | |
|---------------|---|---------|-----|
| 2 | 2 to 1 | $2 = 1$ | 2:1 |
| 3 | 3 to 1 | $3 = 1$ | 3:1 |
| $\frac{1}{2}$ | 1 to 2 | $1 = 2$ | 1:2 |

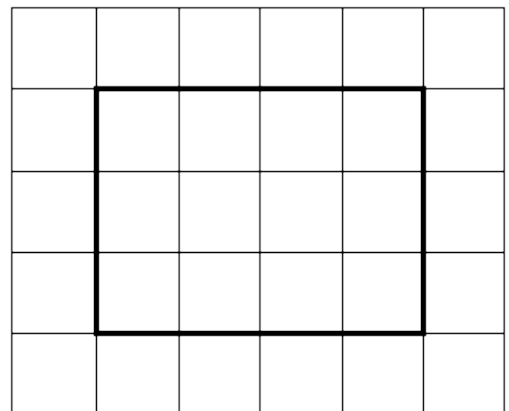
Apply this idea to the following questions and use the information to write a proportion and answer the question.

- Before the basketball team starts practicing, the coach wants to prepare players by helping them understand the court they will be playing on. The coach has created a scaled picture of a court for the players. The image to the right is scaled by a factor of 8. Based upon the image, what would be the actual length and width of a basketball court, in feet?

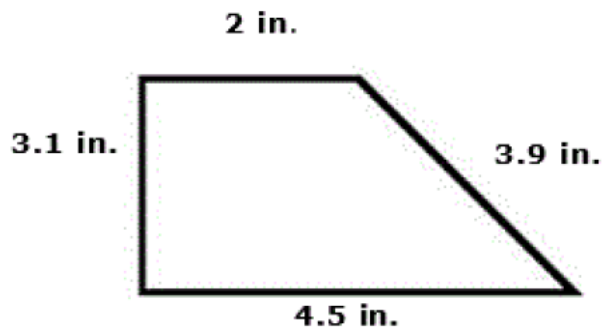


Length = _____ Width = _____

- A scale factor of 4 was applied to the figure below. What would be the new height and width of the **BOLDED** rectangle?



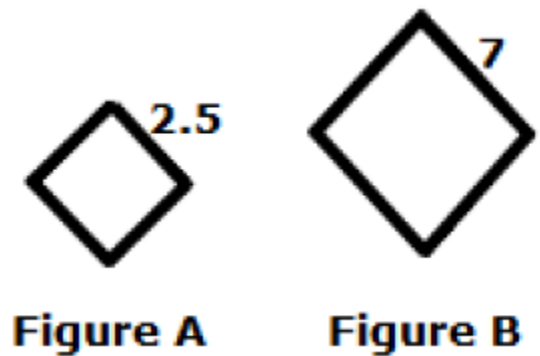
3. Mr. Twain asked the students in his class to draw the figure below using a scale factor of 3. Then, he asked students to tell him one of the new side lengths of the figure. Some student responses are below...



| Student | Response |
|----------|----------|
| Mark | 5 in. |
| Samantha | 6 in. |
| Divia | 1.3 in. |
| Cheng | 0.9 in. |
| Candice | 11.7 in. |

Which students answered Mr. Twain correctly?

4. Figure B is a scale image of figure A as shown. What scale factor was applied to figure A to produce figure B?



What strategy did you use to figure this out?