**Scale Factor:** The \_\_\_\_\_\_\_\_\_\_ written as a \_\_\_\_\_\_\_\_\_ in simplest terms. \*Remember, ratios must have the \_\_\_\_\_\_\_\_\_\_ units.

**Example 1:** Find the scale factor of a model sailboat if the scale is 1 inch = 6 feet



**Example 2:** What is the scale factor of a model car if the scale is 1 in = 2 feet?



Scale factor can also be used to solve problems. You need to interpret the situation to determine how to use the scale factor. Since a scale factor uses the same units, you may want to think of your unit rate in terms of $\frac{model}{actual}$.

**Example 3:** A model rocket was built using a scale factor of 1:15. If the height of the actual rocket is 9.9 m, what is the height of the model in millimeters?

**Example 4:** A backyard playhouse was designed after a real house, using a scale factor of 3:5. If the ceilings in the playhouse are 6 foot tall, how high are the ceilings in the actual house?

**Example 5:** A dinosaur figurine was built using a scale factor of 1:42. If the actual dinosaur is 12 ¼ feet tall, what is the height of the figurine in inches?

Table Challenge:

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| --- | --- |
| 1. | 2. |
| 3. | 4. |
| 5. | 6. |
| 7. | 8. |