|  |  |
| --- | --- |
| Math 9**Enlargements & Reductions** | Name:Date:Block: |

**Warm-up**: Review from last class:

A **proportion** is a relationship that says that two ratios are equal.

A proportion can be expressed in fraction form.

1. Identify the missing value to make an equivalent fraction.

**a)** **b)** **c)** **d)**

1. For each regular polygon, what is the ratio of one side length to the perimeter? Use ratio notation.

**a)** **b)**

**c)**

1. The distance between Town B and Town C is 56 km. The distance shown on the map is 7 cm in length. What is the actual distance between Town A and Town C if it is represented on the same map by a length of 12.5 cm?

**Introduction**: In this session, we want to discover how to make a shape bigger (Enlargement), or smaller (Reduction) by multiplying it by a “constant factor”.

**3 Key ideas:**

1. An ***Enlargement*** results in an image that is the same shape but proportionally larger than the original.
2. A **Reduction** results in an image that is the same shape but proportionally smaller than the original.
3. The **Scale factor** is a constant amount that **ALL Dimensions** of an object are multiplied by to create an enlargement or reduction.

**Example 1**: For each case below, use your ***ruler*** and measure the length of each line segment. Write the measurements dwo Then determine the scale factor.

Scale factor: \_\_\_\_\_\_\_\_\_\_\_\_\_

Scale factor: \_\_\_\_\_\_\_\_\_\_

**Example 2:**  For the letter “H” below:

1. Use a scale factor of 1.5 to enlarge the letter.

H

1. Use a scale factor of ¼ to reduce the letter.

H

**Summary:**

A scale factor less than 1 indicates a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and a scale factor grater than 1 indicates a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_