

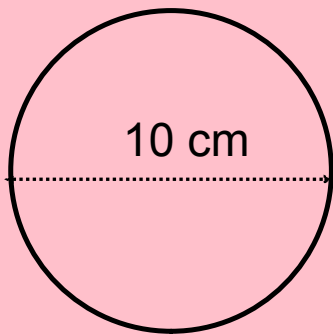
7.2 Scale Diagrams and Reductions

A scale diagram can be smaller than the original diagram.

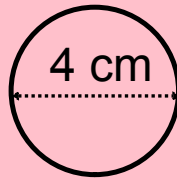
This type of scale diagram is called a **reduction**.

A reduction has a scale factor that is less than 1

Example # 1



Original



Scale Diagram

Scale factor = $\frac{\text{diameter on scale diagram}}{\text{diameter on original diagram}}$

$$= \frac{4}{10} = \frac{2}{5}$$

Example # 2

A top view of a patio table is 105cm by 165cm.
A reduction is to be drawn with scale factor $\frac{1}{5}$.
Find the dimensions of the reduction.



Write the scale factor as a decimal

$$\frac{1}{5} = 1 \div 5 = 0.2$$

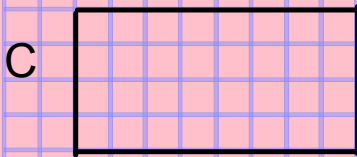
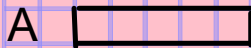
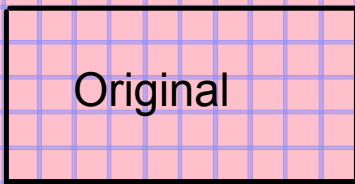
Original Width: 105cm

Reduction Width: $105\text{cm} \times 0.2 = 21\text{cm}$

Original Length: 165cm

Reduction Length: $165\text{cm} \times 0.2 = 33\text{cm}$

Dimensions of the reduction are 21cm by 33cm



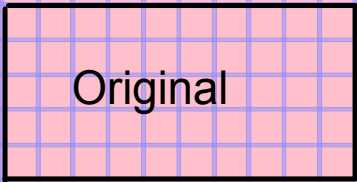
Example #3

Which diagram has sides that are **proportional** to the original?

Proportion

An equation, such as $\frac{3}{4} = \frac{6}{8}$,
which states that 2 ratios are equal.

Two diagrams are 'proportional' if all sides are multiplied or divided by the same number.

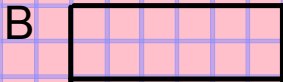


Original: 5 by 10
Write as a fraction & reduce

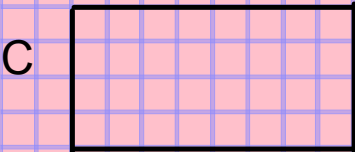
$$\frac{5}{10} = \frac{1}{2}$$



A) 1 by 5



B) 2 by 6



C) 4 by 8



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#'s 4 to 12

