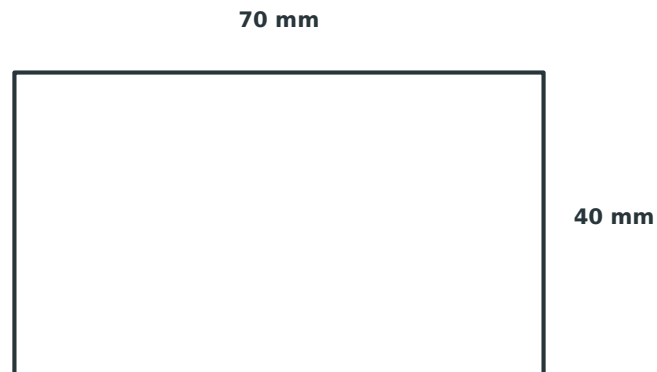


Metric room, 1 to 80

A fictional room is 5.6 x 3.2 m. Use scale 1:80. Find the drawing width and height in mm, then the real and drawn rectangle areas.



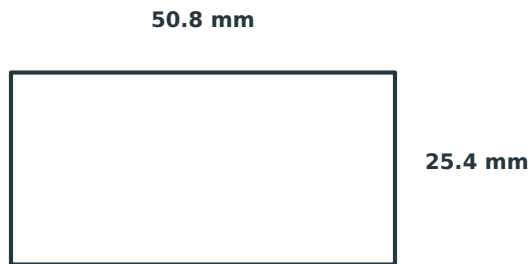
$5600/80=70$ mm; $3200/80=40$ mm. Drawn area 2800 mm². Real area 17.92 m² =17920000 mm². Area factor $1/6400$.

Use one length factor on both axes. A length factor k gives an area factor k squared only after using compatible area units. Check the intended drawing fits before choosing a scale. This is a classroom diagram, not a building specification.



Imperial table, quarter inch to one foot

A fictional tabletop is 8 x 4 ft. Let 1/4 inch represent 1 foot. First express the scale with equal units. Find drawing size in inches and mm.



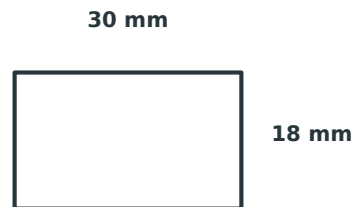
1/4 in : 12 in = 1:48. Drawing 2 x 1 in = 50.8 x 25.4 mm. Real area 32 ft²; drawing area 2 in². Convert area units before comparing factors.

Use one length factor on both axes. A length factor k gives an area factor k^2 only after using compatible area units. Check the intended drawing fits before choosing a scale. This is a classroom diagram, not a building specification.



Label enlargement, three to two

A fictional label is 20 x12 mm. Enlarge it at 3:2. Find target size, original area, target area and area scale factor.



Factor $3/2=1.5$. Target 30 x18 mm. Original 240 mm²; target 540 mm². Area factor $(3/2)^2=2.25$.

Use one length factor on both axes. A length factor k gives an area factor k^2 only after using compatible area units. Check the intended drawing fits before choosing a scale. This is a classroom diagram, not a building specification.

