

Scale Drawings: Lengths, Areas and Scale Factors

Grade 7 math · Worksheet · Standards: 7.G.A.1

Name: _____ Date: _____ Class: _____

These problems train standard 7.G.A.1: reading scale drawings, finding actual lengths and areas, and reproducing a drawing at a different scale. Early problems apply a scale to one length, and later ones combine scale, units, perimeter and area.

Write the scale as a ratio before you calculate and keep the units attached. Remember that areas depend on the square of the scale, and check each area two ways when you can.

Standards: 7.G.A.1 · **Level:** Grade 7

Problem 1 Fence Plan Length (easy)

A plan uses the scale 1 in = 5 ft. A wall measures 3 in on the plan. How long is the real wall?

Problem 2 Highway on a Map (easy)

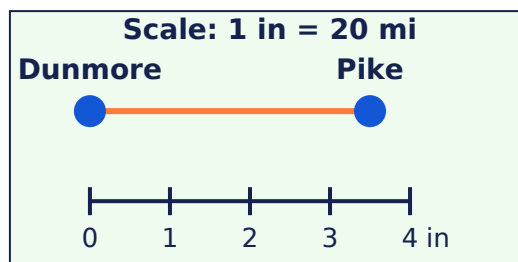
A map scale is 1 in = 30 mi. Two exits are 2.5 in apart on the map. Find the actual distance.

Problem 3 Drawing a Length (easy)

A pool is 40 ft long. How long is it on a drawing with the scale 1 in = 8 ft?

Problem 4 Measure Between Two Towns (easy)

The segment between Dunmore and Pike measures 3.5 in on this map, and the scale is 1 in = 20 mi. Find the actual distance.



Segment of 3.5 inches.

Problem 5 Find the Scale (medium)

A 6 in line on a drawing stands for a 9 ft length. Write the scale as 1 in = ? ft, then write the scale factor as a fraction (convert feet to inches).

Problem 6 Blueprint Living Room (medium)

A blueprint uses the scale $\frac{1}{4}$ in = 1 ft. The living room is 6.75 in long on the blueprint. Find its actual length.

Problem 7 Blueprint Kitchen (medium)

A kitchen is 14 ft by 11 ft. Find its dimensions on a blueprint with the scale $\frac{1}{4}$ in = 1 ft.

Problem 8 Trail in Feet (medium)

A trail map has the scale 1 in = 2 mi. The trail is 3.75 in long on the map. How many feet long is the real trail? (1 mi = 5,280 ft)

Problem 9 Scale Table (medium)

Complete the table for the scale 1 in = 12 ft.

Drawing (in)	1	2.5	4	6.25
Actual (ft)				

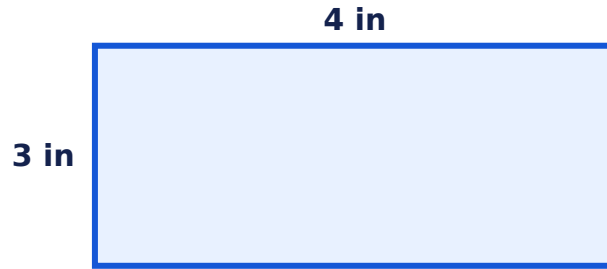
Blank scale table.

Problem 10 Same Wall, Two Drawings (medium)

Drawing A uses 1 in = 4 ft and Drawing B uses 1 in = 10 ft. A wall is 5 in long on Drawing A. How long is it on Drawing B?

Problem 11 Area from a Rectangle Drawing (medium)

The drawing shows a patio at the scale 1 in = 6 ft. Find the actual area.



Patio drawing, 1 in = 6 ft.

Problem 12 Garden on Paper (medium)

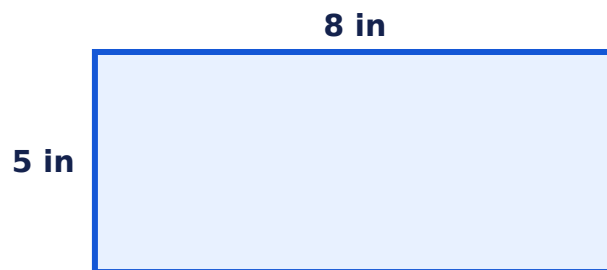
A garden is 30 ft by 18 ft. It is drawn at the scale 1 in = 6 ft. Find the area of the drawing in square inches.

Problem 13 A Ratio Scale (hard)

A model car is built at the scale 1 : 24. The real car is 15 ft long. How long is the model in inches?

Problem 14 Redraw at a New Scale (hard)

A rectangle is drawn 8 in by 5 in at the scale 1 in = 3 ft. Redraw it at the scale 1 in = 6 ft. Find the new dimensions and compare the two drawing areas.



Original drawing, 1 in = 3 ft.

Problem 15 Classroom Carpet (medium)

A floor plan uses the scale 1 in = 4 ft. The classroom is 7.5 in by 6 in on the plan. Carpet costs \$2.80 per square foot. Find the cost to carpet the room.



Floor plan, 1 in = 4 ft.

Problem 16 Road Trip Timing (medium)

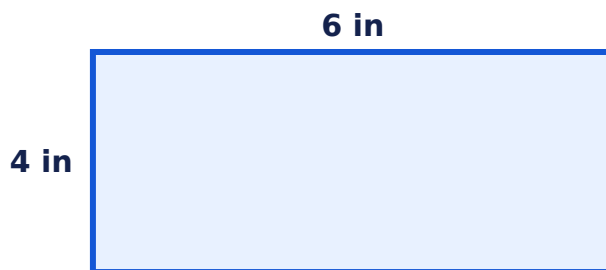
On a road map, 1 in = 45 mi. A route measures 4.2 in. At an average speed of 60 mph, how long does the drive take?

Problem 17 Playground Fence (hard)

A playground plan has the scale 1 in = 8 ft. The playground is 5.5 in by 3 in on the plan. Fence costs \$9.50 per foot. Find the cost to fence the whole perimeter.

Problem 18 Enlarging a Photo (hard)

A 4 in by 6 in photo is enlarged with scale factor 2.5. Find the new dimensions and how many times as large the area becomes.



Original photo.

Problem 19 Mural Sketches (hard)

A wall mural is 9 ft by 6 ft. An artist sketches it at the scale 1 in = 1.5 ft. A larger sketch uses the scale 1 in = 0.75 ft. How many times the area of the small sketch is the large sketch?

Problem 20 Lake on Two Maps (hard)

On Map A (1 in = 20 mi) a lake is a rectangle 2.5 in by 1.5 in. Find the actual area of the lake. Map B uses 1 in = 50 mi. Find the area of the lake on Map B.