

Grade 7 · Scale Drawings · Worksheet

Common Core 7.G.A.1 · mathovore.fr

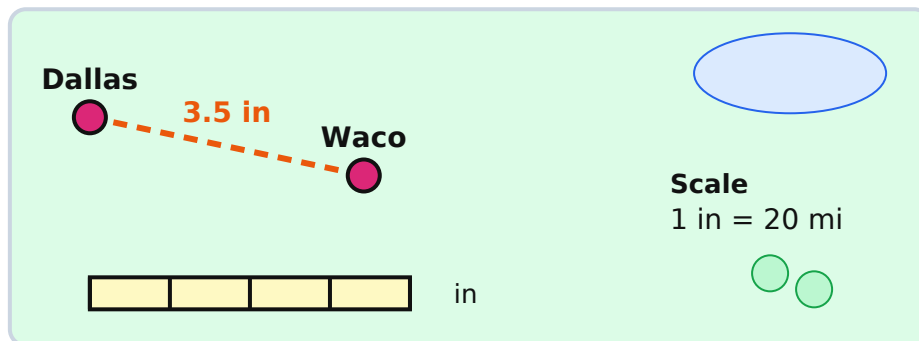
Name: _____ Date: ____/____/____ Score: _____

These twenty problems practice Common Core 7.G.A.1: using a scale to find actual lengths and areas from maps and blueprints, writing a scale as a ratio, and reproducing a drawing at a different scale. The first problems use one-step multiplication or division. Later problems combine perimeter, area, cost and rates in real situations such as a playground plan, a flooring job and a road trip.

Grade 7 Common Core: 7.G.A.1

Problem 1: Map distance

A map of Texas uses the scale $1 \text{ in} = 20 \text{ mi}$. Dallas and Waco are 3.5 in apart on the map. Find the actual distance.



Distance on the map: 3.5 in .

Problem 2: City map

A city map uses the scale $1 \text{ in} = 12 \text{ mi}$. Riverton and Oakdale are 6.5 in apart on the map. Find the actual distance between the two towns.

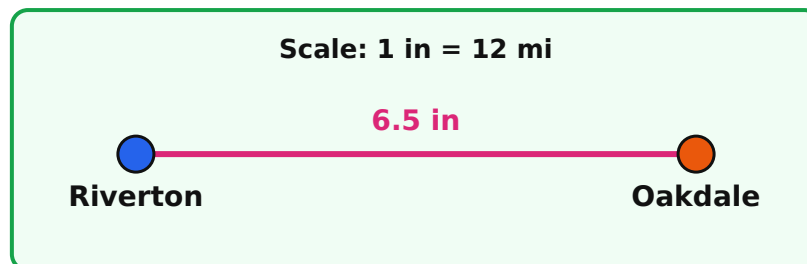
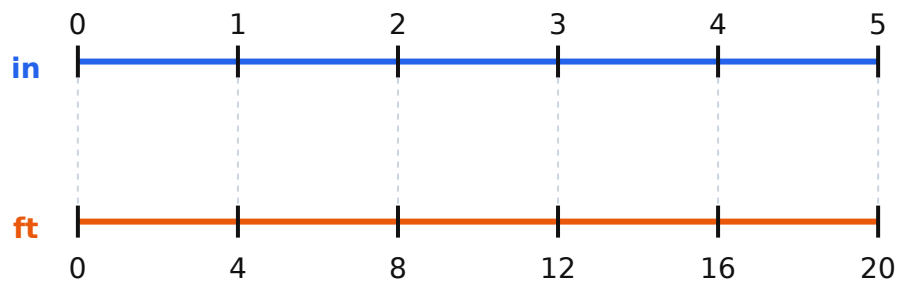


Figure for Problem 2.

Problem 3: Actual to drawing

A scale drawing uses $1 \text{ in} = 4 \text{ ft}$. A wall is 18 ft long. How long is the wall in the drawing?



Double number line for $1 \text{ in} = 4 \text{ ft}$.

Problem 4: Furniture plan

Priya draws a floor plan with the scale $1 \text{ in} = 5 \text{ ft}$. Her couch is 7 ft long. How long is the couch on the plan?

Problem 5: Find the scale

On a scale drawing, a fence that is actually 30 ft long measures 6 in . Write the scale as $1 \text{ in} = \underline{\hspace{1cm}} \text{ ft}$.

Problem 6: Model airplane

A wing of a model airplane is 4 in long. The wing of the real airplane is 28 ft long. Write the scale as $1 \text{ in} = \underline{\hspace{1cm}} \text{ ft}$.

Problem 7: Scale as a ratio

A model uses the scale $1 \text{ in} = 3 \text{ ft}$. Write the scale as a ratio with no units, using the same unit for both lengths.

Problem 8: Yards to a ratio

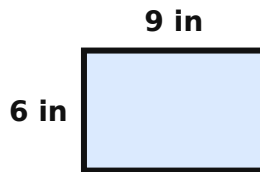
A map of a golf course uses the scale $1 \text{ in} = 10 \text{ yd}$. Write the scale as a ratio with no units, using the same unit for both lengths.

Problem 9: Half-inch scale

A deck plan uses the scale $\frac{1}{2} \text{ in} = 3 \text{ ft}$. On the plan the deck is 5 in long and 3 in wide. Find the actual length and width of the deck.

Problem 10: Blueprint of a room

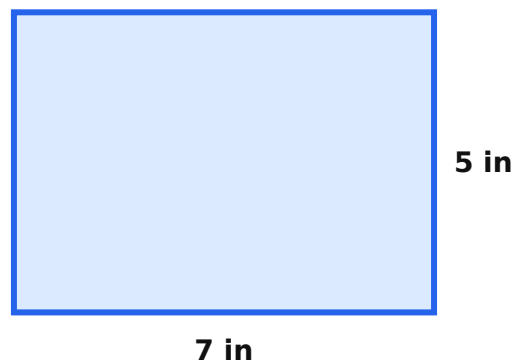
On a blueprint with scale $1 \text{ in} = 4 \text{ ft}$, a room measures 9 in by 6 in . Find the actual dimensions and the actual area of the floor.



Drawn at half size. Scale: $1 \text{ in} = 4 \text{ ft}$.

Problem 11: Classroom floor

The plan of a classroom is a rectangle 7 in by 5 in . The scale is $1 \text{ in} = 3 \text{ ft}$. Find the actual length, width and area of the classroom floor.



Plan at $1 \text{ in} = 3 \text{ ft}$ (shown at one-third size).

Problem 12: Area from a drawing

A patio is drawn as a 5 in by 2 in rectangle with the scale $1 \text{ in} = 3 \text{ ft}$. Find the actual area of the patio. How many times as large is the actual area as the drawing area?



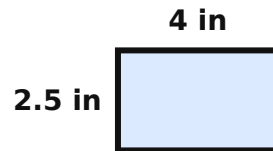
Drawing of a patio at $1 \text{ in} = 3 \text{ ft}$ (shown at half size).

Problem 13: Scale from area

A stage is drawn as a rectangle 3 in by 2 in. The actual stage has an area of 864 ft^2 . Find the scale of the drawing as 1 in = ____ ft. Then find the actual length and width.

Problem 14: A new scale

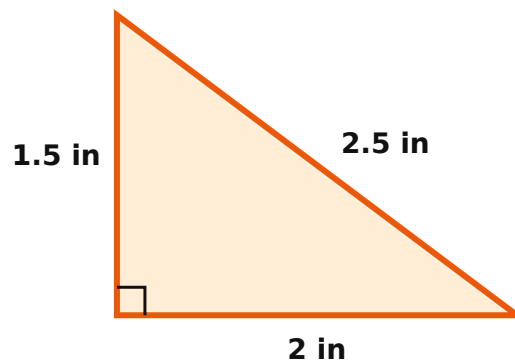
A rectangle is drawn 4 in by 2.5 in with the scale 1 in = 6 ft. Find its dimensions in a new drawing that uses 1 in = 3 ft.



Original drawing at 1 in = 6 ft (shown at half size).

Problem 15: Redraw a triangle

A triangular garden is drawn as a right triangle with sides 1.5 in, 2 in and 2.5 in at the scale 1 in = 20 ft. (a) Find the actual side lengths. (b) Find the side lengths of a new drawing at the scale 1 in = 10 ft. (c) Find the perimeter of the new drawing.



Garden drawn at 1 in = 20 ft (shown at three-fourths size).

Problem 16: Playground plan

A playground plan uses 1 in = 8 ft. The sandbox is a rectangle 1.5 in by 1 in on the plan. Find the actual perimeter and area of the sandbox.



Sandbox on the plan. Scale: 1 in = 8 ft.

Problem 17: Soccer field

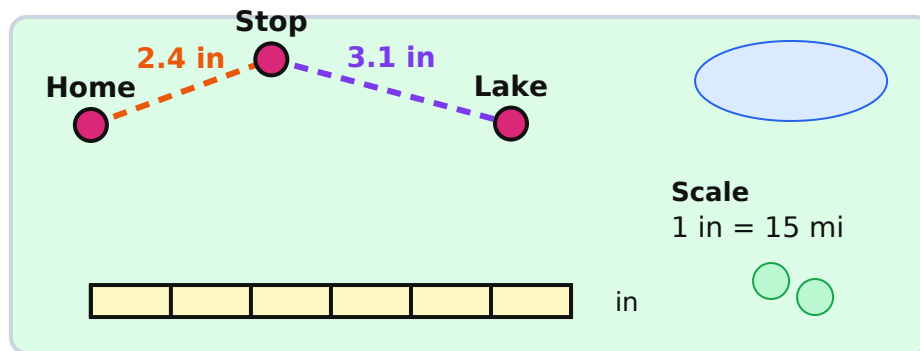
A youth soccer field is 120 yd by 60 yd. Ethan draws it with the scale 1 in = 20 yd on a sheet of paper that is 8.5 in by 11 in. Find the dimensions of his drawing. Does it fit on the paper?

Problem 18: New floor

The plan of a living room is a rectangle 4 in by 3 in with the scale 1 in = 5 ft. Flooring costs \$2.50 per square foot. Find the actual area of the room and the cost to cover the whole floor.

Problem 19: Road trip

On a map with scale 1 in = 15 mi, Maya's route from home to a rest stop measures 2.4 in and from the rest stop to the lake measures 3.1 in. Find the total actual distance. How long does the trip take at an average speed of 55 mph?



Two legs of the trip: 2.4 in and 3.1 in.

Problem 20: Park map on paper

A park is 450 ft by 270 ft. Mei wants to draw it on a sheet of paper with a drawing area of 9 in by 6.5 in. She can choose 1 in = 40 ft, 1 in = 50 ft or 1 in = 60 ft. Which scale gives the largest drawing that still fits? Give the drawing dimensions.