

Grade 7 · Scale Drawings · Quiz

Common Core 7.G.A.1 · mathovore.fr

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

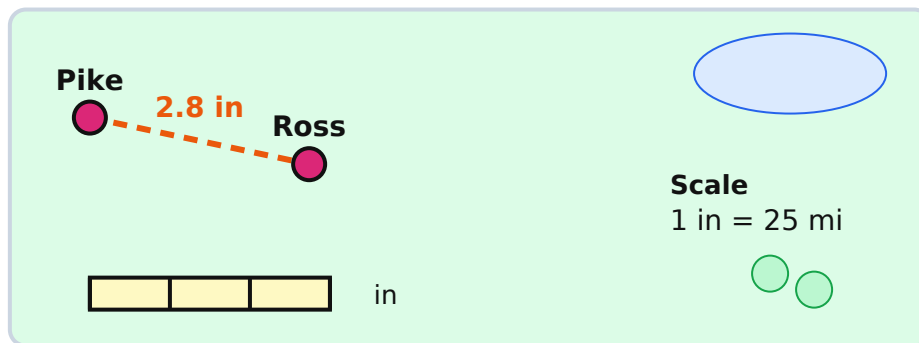
Answer these ten multiple-choice questions on scale drawings. Each question has exactly one correct answer, and several show a map or a figure. Work each one out on scratch paper first, then read the explanation to find your mistakes.

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

Questions

Question 1

Two towns are 2.8 in apart on a map with the scale 1 in = 25 mi. What is the actual distance?



The map distance is 2.8 in.

- A. 27.8 mi
- B. 8.9 mi
- C. 700 mi
- D. 70 mi

Question 2

A scale drawing uses 1 in = 6 ft. A hallway is 21 ft long. How long is it in the drawing?

- A. 3.5 in
- B. 126 in
- C. 15 in
- D. 27 in

Question 3

Which scale matches this drawing?



The wall is drawn 5 in long. It is 20 ft long in real life.

- A. 1 in = 5 ft
- B. 1 in = 15 ft
- C. 1 in = 4 ft
- D. 1 in = 25 ft

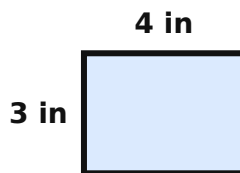
Question 4

Write the scale 1 in = 2 ft as a ratio with the same unit for both lengths.

- A. 1:2
- B. 1:24
- C. 1:12
- D. 1:20

Question 5

A room is drawn as the rectangle below with the scale 1 in = 2 ft. What is the actual area of the room?

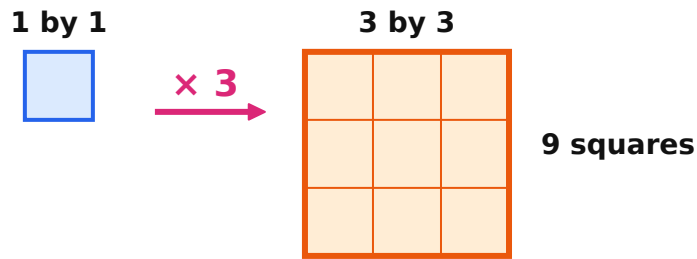


Drawn at half size. Scale: 1 in = 2 ft.

- A. 24 ft²
- B. 12 ft²
- C. 96 ft²
- D. 48 ft²

Question 6

A drawing is enlarged with a scale factor of 3. By what factor does the area change?

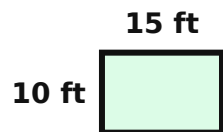


A scale factor of 3 enlarges each side by 3.

- A. 9
- B. 3
- C. 6
- D. 27

Question 7

A room is 15 ft by 10 ft. Which drawing size uses the scale 1 in = 5 ft?



Actual room: 15 ft by 10 ft (shape only).

- A. 75 in by 50 in
- B. 10 in by 5 in
- C. 3 in by 2 in
- D. 20 in by 15 in

Question 8

A map uses the scale $\frac{1}{2}$ in = 4 mi. How many miles are represented by 5 in?

- A. 20 mi
- B. 10 mi
- C. 80 mi
- D. 40 mi

Question 9

A rectangle is drawn 6 in by 4 in at 1 in = 5 ft. What are its dimensions at 1 in = 10 ft?



Original drawing at $1\text{ in} = 5\text{ ft}$ (shown at half size).

- A. 12 in by 8 in
- B. 3 in by 2 in
- C. 6 in by 4 in
- D. 30 in by 20 in

Question 10

Mei wants a drawing of a 60 ft tall building to be exactly 6 in tall. Which scale should she use?

- A. $1\text{ in} = 6\text{ ft}$
- B. $1\text{ in} = 10\text{ ft}$
- C. $1\text{ in} = 360\text{ ft}$
- D. $1\text{ in} = 54\text{ ft}$

Answer key

1. **D** – Multiply the map distance by the scale: $2.8 \times 25 = 70$. Dividing 25 by 2.8 gives about 8.9, which is the wrong operation.
2. **A** – Going from actual to drawing means dividing by the scale: $21 \div 6 = 3.5$. Multiplying gives 126, which is the mistake.
3. **C** – Divide actual by drawing: $20 \div 5 = 4$. The value 15 comes from subtracting and 25 from adding.
4. **B** – Two feet is $2 \times 12 = 24$ inches, so the ratio is 1:24. Using 1:2 ignores the unit change.
5. **D** – The actual sides are 8 ft and 6 ft, so the area is $8 \times 6 = 48$. The value 24 multiplies the drawing area 12 by 2 only.
6. **A** – Area depends on two lengths, so it changes by $3^2 = 9$. A factor of 3 is the change in length only.
7. **C** – Divide each actual length by 5: $15 \div 5 = 3$ and $10 \div 5 = 2$. Multiplying gives 75 and 50.
8. **D** – One inch is 8 miles, so 5 in is $5 \times 8 = 40$. Using 4 miles per inch gives 20.
9. **B** – The actual figure is 30 ft by 20 ft. A larger unit for 1 inch makes the drawing smaller: $30 \div 10 = 3$ and $20 \div 10 = 2$.
10. **B** – Divide actual by drawing: $60 \div 6 = 10$, so each inch is 10 feet. Choosing 54 comes from subtracting.

Remember:

- Standard 7.G.A.1: solve problems about actual lengths and areas from a scale drawing.
- A scale such as 1 in = 5 ft is a unit rate: multiply drawing lengths by 5 to get actual feet.
- To change a scale into a scale factor, write both lengths in the same unit.
- Areas change by the square of the scale factor, not by the scale factor itself.
- To redraw at a new scale, find the actual lengths first, then divide by the new scale.