

Scale Drawings and Similar Figures: math test solutions, Grade 7 – download the PDF

Test solutions with the detailed point scale. Add up your points and spot what to review.

Suggested time: 45 minutes. Out of 20 points. Calculator allowed only when the problem says so.

1 Scale and lengths

/ 4 pts

- a. $3.5 \times 6 = 21$ m. (1 pt)
- b. $90 \div 6 = 15$ cm. (1 pt)
- c. 6 m = 600 cm, so the ratio is 1 : 600. (2 pts: 1 for the conversion, 1 for the ratio)

2 Two rectangles

/ 4 pts

- a. $10 \div 4 = 2.5$. (1 pt)
- b. $7 \times 2.5 = 17.5$ cm. (1 pt)
- c. ABCD: $2 \times (4 + 7) = 22$ cm; A'B'C'D': $2 \times (10 + 17.5) = 55$ cm, which is 22×2.5 . (1 pt)
- d. ABCD: 28 cm^2 ; A'B'C'D': $10 \times 17.5 = 175 \text{ cm}^2$. $175 \div 28 = 6.25 = 2.5^2$. The area is multiplied by 6.25. (1 pt)

3 Distances on a map

/ 3 pts

- a. $3.25 \times 12 = 39$ mi. (1.5 pts)
- b. $78 \div 12 = 6.5$ in. (1.5 pts)

4 A living room plan

/ 4 pts

- a. $7 \times 2 = 14$ ft and $5 \times 2 = 10$ ft. (1 pt)
- b. $14 \times 10 = 140$ ft². (1 pt)
- c. $7 \times 5 = 35$ cm². (1 pt)
- d. $35 \times 2^2 = 35 \times 4 = 140$, which matches the actual area. (1 pt)

5 Similar triangles

/ 3 pts

- a. $15 \div 5 = 3$. (1 pt)
- b. $12 \times 3 = 36$ and $13 \times 3 = 39$. (1 pt)
- c. $30 \times 3^2 = 270$. (1 pt)

6 True or false?

/ 2 pts

- a. False: the area is multiplied by $3^2 = 9$. (1 pt)
- b. True: only lengths are scaled; angle measures do not change. (1 pt)



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