

Homework

LESSON

Problem Solving

5-7 Similar Figures and Proportions

Use the information in the table to solve problems 1–3.

1. A small reproduction of one of the paintings in the list is similar in size. The reproduction measures 11 inches by 10 inches. Of which painting is this a reproduction?

Painting	Artist	Original Size (in.)
<i>Mona Lisa</i>	Leonardo da Vinci	30 by 21
<i>The Dance Class</i>	Edgar Degas	33 by 30
<i>The Blue Vase</i>	Paul Cézanne	22 by 18

2. A local artist painted a reproduction of Cézanne's painting. It measures 88 inches by 72 inches. Is the reproduction similar to the original? What is the ratio of corresponding sides?

3. A poster company made a poster of da Vinci's painting. The poster is 5 feet long and 3.5 feet wide. Is the poster similar to the original *Mona Lisa*? What is the ratio of corresponding sides?

Choose the letter for the best answer.

4. Triangle *ABC* has sides of 15 cm, 20 cm, and 25 cm. Which triangle could be similar to triangle *ABC*?
- A** A triangle with sides of 3 cm, 4 cm, and 5 cm
B A triangle with sides of 5 cm, 6 cm, and 8 cm
C A triangle with sides of 30 cm, 40 cm, and 55 cm
D A triangle with sides of 5 cm, 10 cm, and 30 cm
5. A rectangular picture frame is 14 inches long and 4 inches wide. Which dimensions could a similar picture frame have?
- F** Length = 21 in.; width = 8 in.
G Length = 35 in.; width = 15 in.
H Length = 49 in.; width = 14 in.
J Length = 7 in.; width = 3 in.
6. A rectangle is 12 meters long and 21 meters wide. Which dimensions correspond to a nonsimilar rectangle?
- A** 4 m; 7 m **C** 20 m; 35 m
B 8 m; 14 m **D** 24 m; 35 m
7. A rectangle is 6 feet long and 15 feet wide. Which dimensions correspond to a similar rectangle?
- F** 8 ft; 24 ft **H** 15 ft; 35 ft
G 10 ft; 25 ft **J** 18 ft; 40 ft

LESSON
5-8 Problem Solving
Using Similar Figures

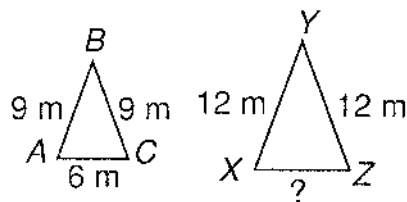
Write the correct answer.

1. An architect is building a model of a tennis court for a new client. On the model, the court is 6 inches wide and 13 inches long. An official tennis court is 36 feet wide. What is the length of a tennis court?
2. Mr. Hemley stands next to the Illinois Centennial Monument at Logan Square in Chicago and casts a shadow that is 18 feet long. The shadow of the monument is 204 feet long. If Mr. Hemley is 6 feet tall, how tall is the monument?
3. The official size of a basketball court in the NBA is 94 feet by 50 feet. The basketball court in the school gym is 47 feet long. How wide must it be to be similar to an NBA court?
4. Two rectangular desks are similar. The larger one is 42 inches long and 18 inches wide. The smaller one is 35 inches long. What is the width of the smaller desk?

Choose the letter for the best answer.

5. An isosceles triangle has two sides that are equal in length. Isosceles triangle ABC is similar to isosceles triangle XYZ . What proportion would you use to find the length of the third side of triangle XYZ ?

A $\frac{BC}{XZ} = \frac{AB}{XY}$ C $\frac{AB}{XY} = \frac{AC}{XZ}$
B $\frac{AC}{XY} = \frac{BC}{XZ}$ D $\frac{AB}{XY} = \frac{BC}{YZ}$



6. The dining room at Monticello, Thomas Jefferson's home in Virginia, is 216 inches by 222 inches. Of the following, which size rug would be similar in shape to the dining room?
F 72 inches by 74 inches
G 108 inches by 110 inches
H 118 inches by 111 inches
J 84 inches by 96 inches
7. A 9-foot street sign casts a 12-foot shadow. The lamppost next to it casts a 24-foot shadow. How tall is the lamppost?
A 24 feet
B 15 feet
C 18 feet
D 36 feet