Name Answers Date

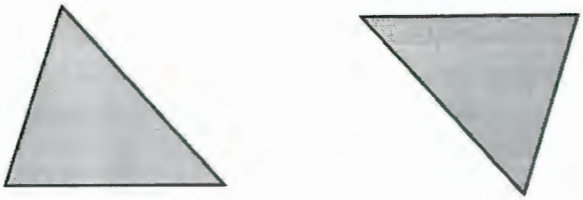
2.1 & 2.5 – Congruent & Similar Figures

1) Two figures are congruent when they have the same shape and the same size.

2) In two shapes, another name for ***matching sides*** is corresponding sides.

3) In two shapes, another name for ***matching angles*** is corresponding angles.

Tell whether the triangles are *congruent* or *not congruent*.

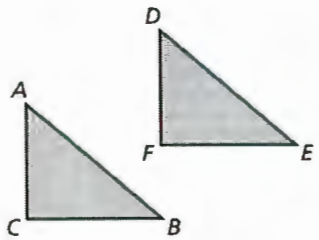
4) 

Congruent, but one is rotated

5) 

Not congruent, the one on the right is smaller.

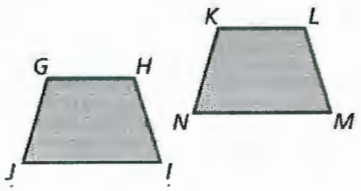
The figures are congruent. Name the corresponding angles and the corresponding sides.

6) 

$\angle A \cong \angle D$ $\overline{AC} \cong \overline{DF}$

$\angle C \cong \angle F$ $\overline{AB} \cong \overline{DE}$

$\angle B \cong \angle E$ $\overline{CB} \cong \overline{FE}$

7) 

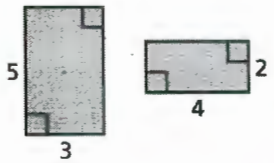
$\angle G \cong \angle K$ $\overline{GH} \cong \overline{KL}$

$\angle H \cong \angle L$ $\overline{HI} \cong \overline{LM}$

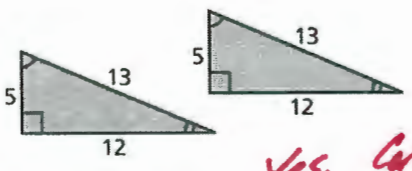
$\angle I \cong \angle M$ $\overline{IJ} \cong \overline{MN}$

$\angle J \cong \angle N$ $\overline{GJ} \cong \overline{KN}$

Tell whether the two figures are congruent. Explain your reasoning.

8) 

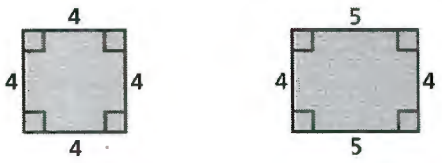
Not congruent. Corresponding sides not congruent

9) 

Yes. Corresponding sides are congruent.

Describe and correct the error in telling whether the two figures are congruent.

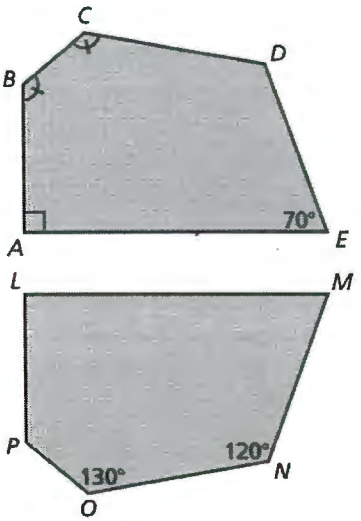
10)



X Both figures have four sides and corresponding angle measures are equal. So, they are congruent.

The corresponding sides are not congruent. You would have to change the measurement of a pair of corresponding sides.

11) The pentagons are congruent. Determine whether the statement is *true* or *false*. Explain your reasoning.



a) $\angle B$ is congruent to $\angle C$.

True. The symbols illustrate the angles are congruent

b) Side MN is congruent to side AE.

False. They are not corresponding sides.

c) $\angle B$ corresponds to $\angle O$.

False. They are neither corresponding nor congruent.

d) Side BC is congruent to side PO.

True. They are corresponding sides.

e) The sum of the angle measures of $LMNOP$ is 540°.

True. All the angles add up to 540°

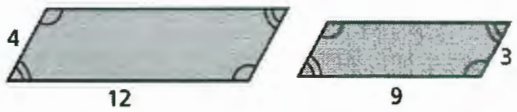
f) The measure of $\angle B$ is 120°.

False. It should be 130°

Complete each statement. Explain briefly why it is true.

12) Tell whether the two figures are similar. Explain your reasoning.

Yes. The ratios of the corresponding sides are equal



$\frac{4}{3} = \frac{12}{9}$

13) The rectangular traffic sign is 18 inches wide and 8 inches tall. The rectangular realtor sign is 27 inches wide and 10 inches tall. Are the signs similar? Explain.

No. The ratios of the corresponding sides are not equal.

$\frac{8}{10} = \frac{18}{27}$ $\quad 8 \cdot 27 = 10 \cdot 18$ ✓

14) The given rectangle needs to be modified.

a) From the original, each side is increased by 2. Is the new rectangle similar to the original? Explain.

$\frac{4}{6} \neq \frac{6}{8}$

No. The ratios of corresponding sides would not be equal

b) From the original, each side is cut in half. Is the new rectangle similar to the original? Explain.

$\frac{4}{6} = \frac{2}{3}$ The ratios of corresponding sides would be equal.

15) Which of the following card dimensions are similar rectangles?

a) 2 in. by 5 in.

b) 3 in. by 6 in.

c) 1 in. by 3 in.

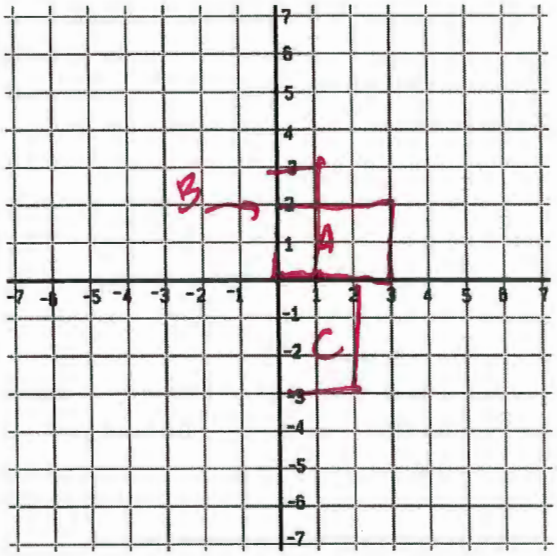
d) 1 in. by 2.5 in.

16) In a coordinate plane, draw the figures with the given vertices. Which figures are similar? Explain your reasoning.

Rectangle A: (0, 0), (3, 0), (3, 2), (0, 2)

Rectangle B: (0, 0), (1, 0), (1, 3), (0, 3)

Rectangle C: (0, 0), (2, 0), (2, −3), (0, −3)

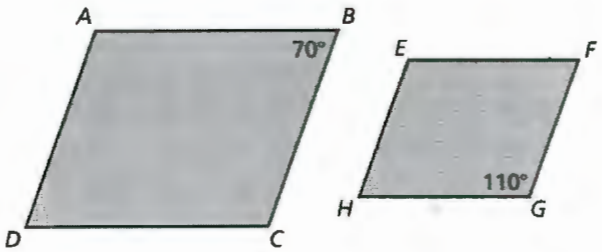


Rect A & C are congruent and similar because the ratio of corresponding sides are equal

The two parallelograms are similar. Find the degree measure of each angle:

17) $m\angle A =$ 110° 18) $m\angle H =$ 70°

19) $m\angle D =$ 70° 20) $m\angle F =$ 70°



21) Is it possible for the following figures to be similar? Explain.

a) A stop sign and a speed limit sign — No. They are different shapes

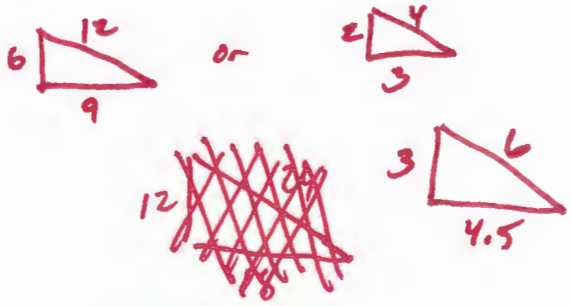
b) A cell phone and an exam paper — Yes. ONLY if their corresponding sides ratios are equal

c) A yield sign and a home plate — " "

d) A laptop and a swimming pool — " "

22) You have a triangle that has side lengths of 6, 9, and 12.

a) Give the side lengths of a similar triangle that is smaller than the given triangle.



b) Give the side lengths of a similar triangle that is large than the given triangle.

example