

In similar polygons:

- 😊 Pairs of corresponding sides have lengths in the same ratio, that is, the lengths are proportional *[same scale factor]*
- 😊 Corresponding angles are equal

Give a similarity [  $\sim$  ] statement

similarity  
statement

**Rectangle**  $ABCD \sim XYRZ$

a) What angle corresponds to  $\angle Z$ ?

$\angle D$

b) what line corresponds to BA?

$YX$

1. Solve for the unknown in each of the following:

A. ~~(3)~~  $\frac{x}{3} = \frac{4}{15}$  (3)

$$x = \frac{12}{15}$$

$$x = 0.8$$

B. ~~(4)~~  $\frac{AB}{4} = \frac{9}{6}$  (4)

$$AB = \frac{36}{6}$$

$$AB = 6$$

C.  $\frac{5}{x} = \frac{6}{10}$

~~(5)~~  $\frac{x}{5} = \frac{10}{6}$  (5)

$$x = \frac{50}{6}$$

$$x = 8.3$$

2. Given the following statement answer the questions below:

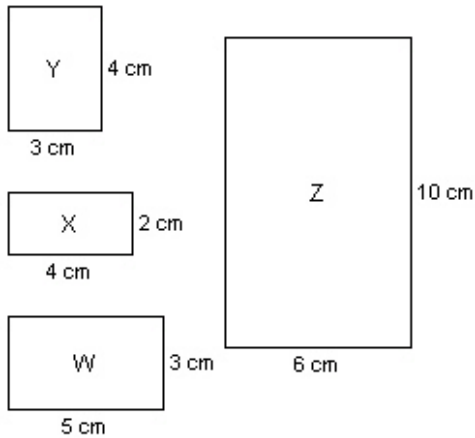
**MRTC ~ NGPL**

A. What side corresponds to PG?

B. Which angle corresponds to R?

TR  
 $\angle G$

Identify similar rectangles.



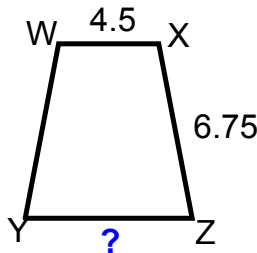
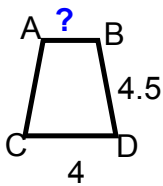
1) Equal ratio corresponding sides

2) Equal corresponding angles [all angles 90°]

	long	short
$\frac{Y}{X}$	$\frac{4}{4} = 1$	$\frac{3}{2} = 1.5$
$\frac{Y}{Z}$	$\frac{4}{10} = 0.4$	$\frac{3}{6} = 0.5$
$\frac{Y}{W}$	$\frac{4}{5} = 0.8$	$\frac{3}{3} = 1$
$\frac{Z}{X}$	$\frac{10}{4} = 2.5$	$\frac{6}{2} = 3$
$\frac{Z}{W}$	$\frac{10}{5} = 2$	$\frac{6}{3} = 2$
$\frac{X}{W}$	$\frac{4}{5} = 0.8$	$\frac{2}{3} = 0.6$

1

The following polygons are **similar**. Find the unknown side



$ABDC \sim WXZY$

$$\frac{AB}{WX} = \frac{BC}{XZ} = \frac{CD}{ZY} = \frac{DA}{YW}$$

$$\frac{AB}{4.5} = \frac{4.5}{6.75} = \frac{4}{ZY} = \frac{DA}{YW}$$

$\frac{AB}{4.5} = \frac{4.5}{6.75}$  (4.5)  $\rightarrow$   $\frac{AB}{4.5} = \frac{4.5}{6.75}$   $\rightarrow$   $AB = 3$

$$\frac{AB}{4.5} = \frac{4.5}{6.75} = \frac{4}{ZY} = \frac{DA}{YW}$$

$$\frac{4}{ZY} = \frac{4.5}{6.75}$$

$$\frac{ZY}{4} = \frac{6.75}{4.5}$$

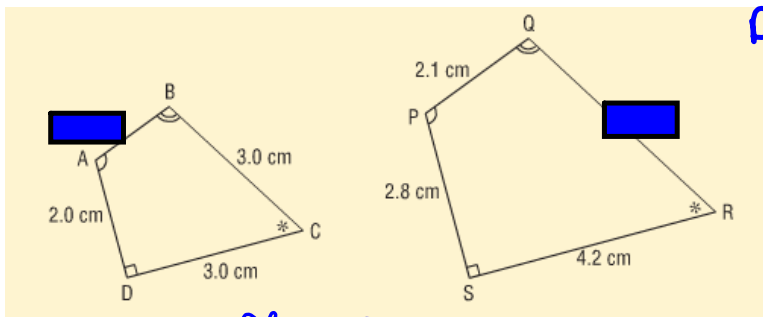
$$ZY = \frac{27}{4.5}$$

$$ZY = 6$$

Given the following similar polygons...

Give a similarity statement

Find side QR? Find side AB?



$DABC \sim SPQR$

$$\frac{AB}{PQ} = \frac{BC}{QR} = \frac{CD}{RS} = \frac{DA}{SP}$$

$$\frac{AB}{2.1} = \frac{3.0}{QR} = \frac{3.0}{4.2} = \frac{2.0}{2.8}$$

$$\frac{3.0}{BC} = \frac{2.0}{2.8}$$

~~$$\frac{BC}{2} = \frac{2.8}{2} \quad (3)$$~~

~~$$\frac{AB}{2.1} = \frac{2.0}{2.8} \quad (2.1)$$~~

$$AB = \frac{4.2}{2.8}$$

$$BC = \frac{8.4}{2}$$

$$AB = 1.5$$

$$BC = 4.2$$

# Classwork/Homework

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a) c ac

→  $\frac{1}{2}$   
 $\frac{1}{3}$   
 $\frac{2}{3}$

Long Short

worksheet