
$\$ 100$ $\$ 100 \quad \$ 100$ $\$ 2000 \$ 200$ $\$ 300 \quad \$ 300$
$\$ 300$
$\$ 3300 \quad \$ 300$
$\$ 400$
$\$ 500$
$\$ 500$
$\$ 500$
$\$ 500$
$\$ 500$

## Are They Similar?

# Side-Splitter and More 

## Finding the Missing Piece

# Area and Perimeter 

## Similarity in

## Right Triangles

| Are they <br> Similar? | Side-Splitter <br> and More | Find the <br> Missing Piece | Area and <br> Perimeter | Right Triangle <br> Similarity |
| :--- | :--- | :--- | :--- | :--- |
| $\underline{\$ 100}$ | $\underline{\$ 100}$ | $\underline{\$ 100}$ | $\underline{\$ 100}$ | $\underline{\$ 100}$ |
| $\underline{\$ 200}$ | $\underline{\$ 200}$ | $\underline{\$ 200}$ | $\underline{\$ 200}$ | $\underline{\$ 200}$ |
| $\underline{\$ 300}$ | $\underline{\$ 300}$ | $\underline{\$ 300}$ | $\underline{\$ 300}$ | $\underline{\$ 300}$ |
| $\underline{\$ 400}$ | $\underline{\$ 400}$ | $\underline{\$ 400}$ | $\underline{\$ 400}$ | $\underline{\$ 400}$ |
| $\underline{\$ 500}$ | $\underline{\$ 500}$ | $\underline{\$ 500}$ | $\underline{\$ 500}$ | $\underline{\$ 500}$ |

## CATEGORY 1 - \$100

Determine whether the pair of polygons are similar. Justify your answer.


25

10

## CATEGORY 1 - \$200

Are these 2 triangles similar? Justify your answer.

?

# Complete the following when $\triangle I J K \sim \Delta L M N$. 

$$
\frac{I K}{K J}=\frac{}{N M}
$$

From 1861 to 1928, U.S currency measured 7.42 in . by 3.13 in . The dimensions of a current bill are shown below. Are the old and new bills similar rectangles?


A map has dimensions 9 in. by 15 in. You want to reduce the map so that it will fit on a 4 in. by 6 in. index card. What are the dimensions of the largest possible complete map that you can fit on the index card?

## CATEGORY 2 - \$100

## What is the value of $x$ ?



## Solve for $x$.



# If $C B=3, C A=10$, and $C E=6$, what is the length of ET? 



## $B C|\mid D E . A B=7, B C=8$, and $D E=34$. Find $B D$.



## Solve for $x$.



## Solve for $H$.



$$
x+3 \quad 7
$$

# 4 

$$
x+6
$$

## Solve for $x$.



## CATEGORY 3 - \$400

## Solve for $n$.



## Solve for $x$.



The perimeter of $\triangle P Q R$ is 75,
$P Q=25, \triangle P Q R \sim \Delta S T U$, and $S T=30$. What is the perimeter of $\triangle$ STU?

The ratio of the corresponding sides of two similar squares is 1 to 3 . What is the ratio of the area of the smaller square to the area of the larger square?


## Find the area of the smaller triangle



Below are 2 right trapezoids. Find the area of the smaller trapezoid.


The perimeters of 2 similar triangles are 12 ft and 45 ft . The area of the smaller triangle is $64 \mathrm{ft}^{2}$. What is the area of the larger triangle?

## Solve for $x$



# Find the geometric mean for the lengths of 9 and 24 in simplest radical form. 



The altitude to the hypotenuse of a right triangle divides the hypotenuse into segments 2 cm and 8 cm long. Find the length of the altitude.

Four streets in a town are illustrated in the accompanying diagram. If the distance on Poplar Street from $F$ to $P$ is 12 miles and the distance on Maple Street from $E$ to $M$ is 10 miles, find the distance on Maple Street, in miles, from $M$ to $P$.


## Solve for $x$ in simplest radical form.



## Yes

## Corresponding sides are in proportion.



## CATEGORY 1 - \$200

## No

## Corresponding sides are not in proportion.



## CATEGORY 1 - \$300

## $L N$

## CATEGORY 1 - \$400

## No

## Corresponding sides are not in proportion.



## CATEGORY 1 - \$500

3.6 in. by 6 in.


## CATEGORY 2 - \$100



## CATEGORY 2 - \$200

$x=3.6$


## CATEGORY 2 - \$300

$$
x=14
$$



## CATEGORY 2 - \$400



## CATEGORY 2 - \$500



## CATEGORY 3 - \$100

$$
H=21 \mathrm{ft}
$$



## CATEGORY 3 - \$200

$x=1$ or $x=-10$

## CATEGORY 3 - \$300



## CATEGORY 3 - \$400



## CATEGORY 3 - \$500



CATEGORY 4 - \$100

90


## CATEGORY 4 - \$200

1:9

CATEGORY 4 - \$300


## CATEGORY 4 - \$400



CATEGORY 4 - \$500

## $900 \mathrm{ft}^{2}$

## CATEGORY 5 - \$100



## CATEGORY 5 - \$200

$6 \sqrt{6}$


## CATEGORY 5 - \$300

4 cm


## CATEGORY 5 - \$400

CATEGORY 5 - \$500


## Right or <br> Wrong??

## Solve for $x, y$, and $z$ in simplest radical form.



FINAL CATEGORY

$$
\begin{gathered}
x=12 \\
y=3 \sqrt{7} \\
z=4 \sqrt{7}
\end{gathered}
$$

# END OF GAME 

Daily Doubles and usage notes follow...

## $D A \| y$



## $D A \| y$





