FINDING SCALE FACTOR
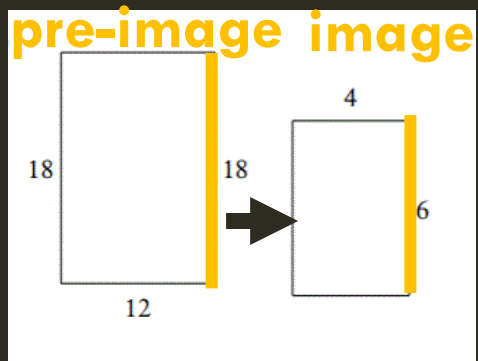
Identify the scale factor of the following dilations:
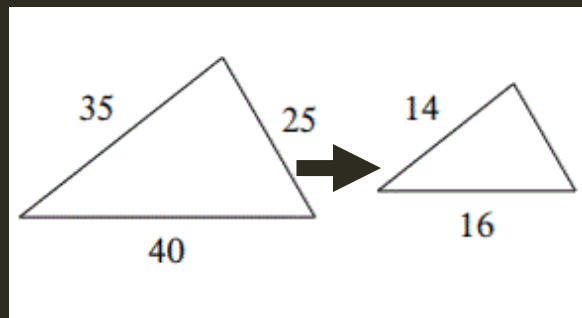
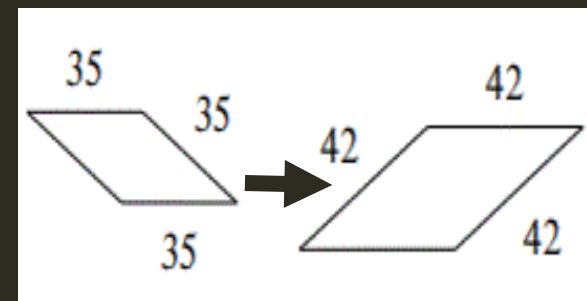**1.**
pre-image image

18 · 18 · 12 · 4 · 6

Reduction

K < 1

2.
35 · 25 · 14 · 40 · 16

3.
35 · 35 · 35 · 42 · 42 · 42

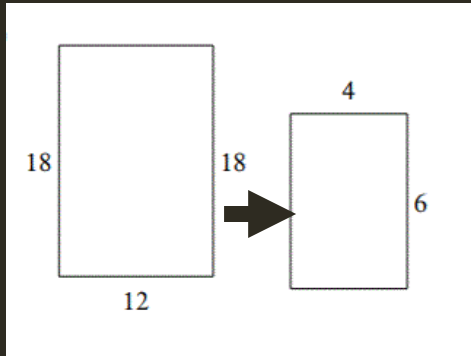$$k = \frac{image}{pre-image} = \frac{6}{18} = \frac{1}{3} \text{ or } 0.33$$

$$k = \frac{image}{pre-image}$$

Identify the scale factor of the following dilations:

1.

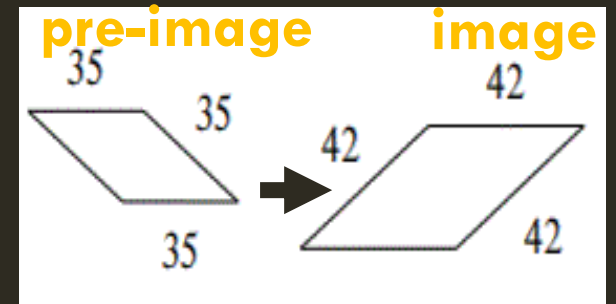
Rectangle: 18, 12, 18 → 4, 6

Reduction; k =1/3 or 0.33

2.

pre-image: 35, 25, 40   image: 14, 16

Reduction; k = 2/5 or 0.4

3.

pre-image: 35, 35, 35   image: 42, 42, 42
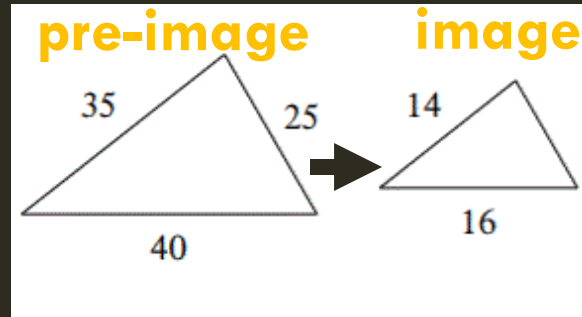
Enlargement; k = 6/5 or 1.2

How do I determine if two figures are dilations?

☑ By comparing their angle measures. Correspond - ing angle measures are the same in dilations.

☑ By comparing their scale factors. The scale factors for all corresponding sides are the same in dilations.

ON YOUR OWN

Determine which of the following figures could be a dilation of the triangle to the right.

16 in.

6 in.

pre-image
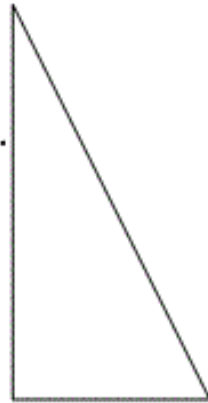
(There could be more than one answer)
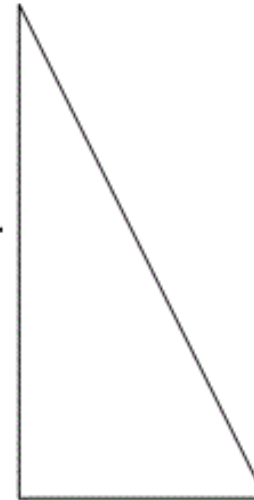
A

6 in.

2.25 in.

B

20 in.

10 in.

C

8 in.

3 in.

D

30 in.

5 in.

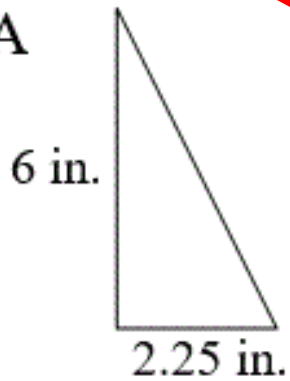**The scale factors have to be the same for each pair of corresponding sides.**

ON YOUR OWN

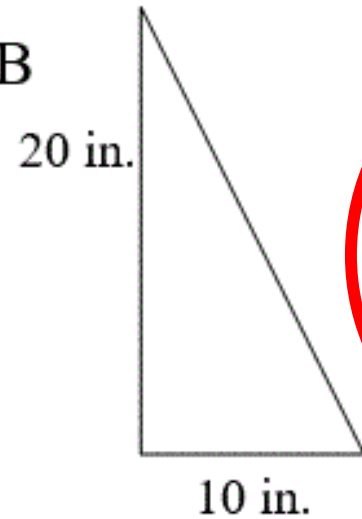**Determine which of the following figures could be a dilation of the triangle to the right.**

16 in

6 in.
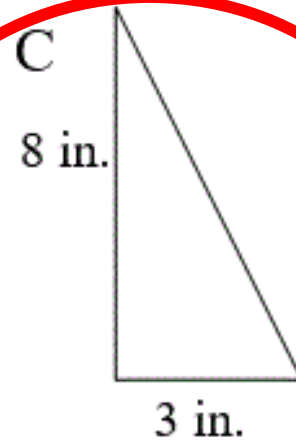
(There could be more than one answer)

A

6 in.

2.25 in.

k = 0.375

B

20 in.
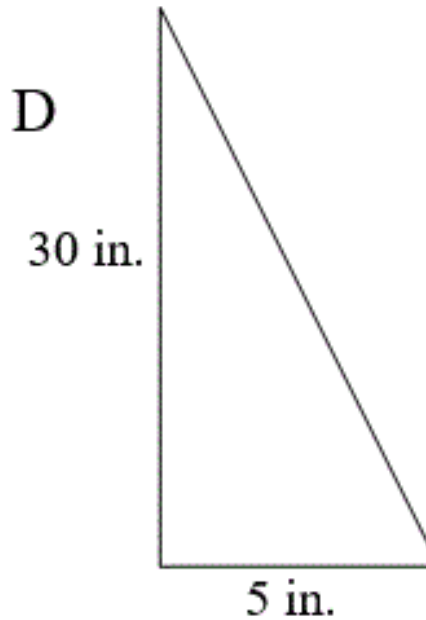
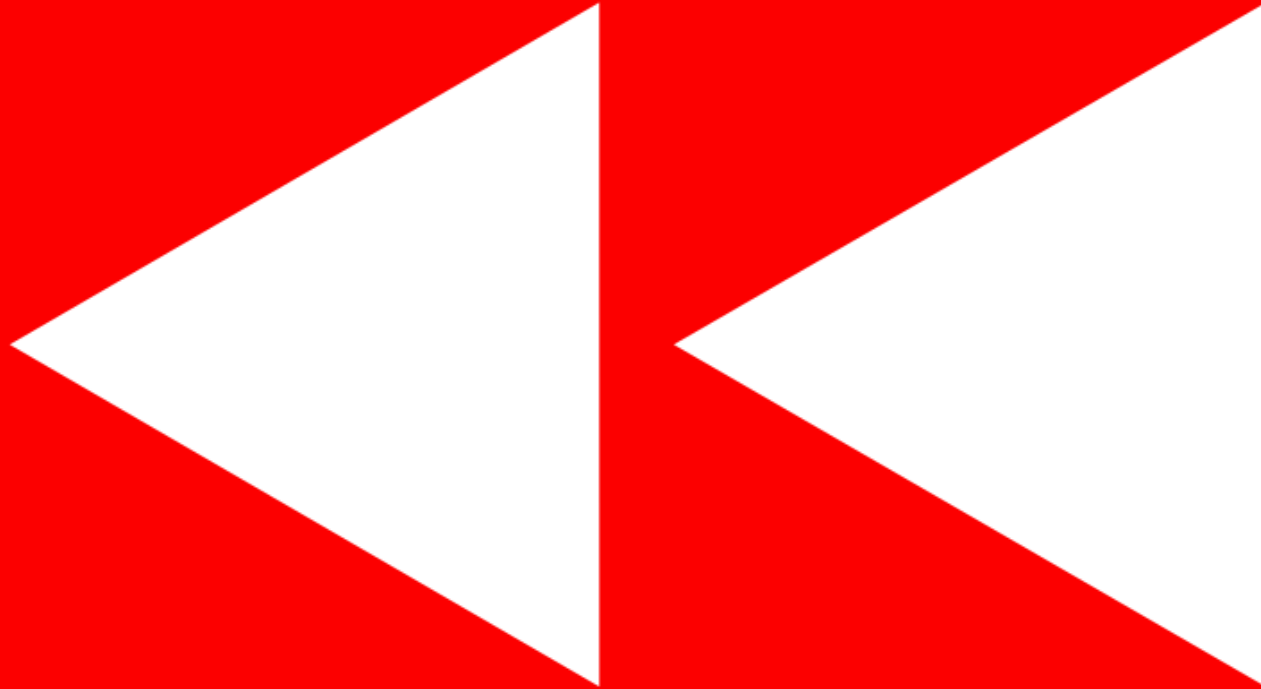10 in.

C

8 in.

3 in.

k = 0.5

D

30 in.

5 in.

Let's Rewind!

COMPLETING PROPORTIONS

Find the missing number in each of the following proportions:

#1 $\dfrac{8}{12} = \dfrac{4}{?}$ **#2** $\dfrac{7}{?} = \dfrac{21}{30}$ **#3** $\dfrac{?}{9} = \dfrac{20}{36}$ **#4** $\dfrac{20}{24} = \dfrac{?}{6}$

A proportion is an equation made up of two equal ratios (fractions).

COMPLETING PROPORTIONS

Find the missing number in each of the following proportions:

#1 $\dfrac{8}{12} = \dfrac{4}{?}$

#2 $\dfrac{7}{?} = \dfrac{21}{30}$

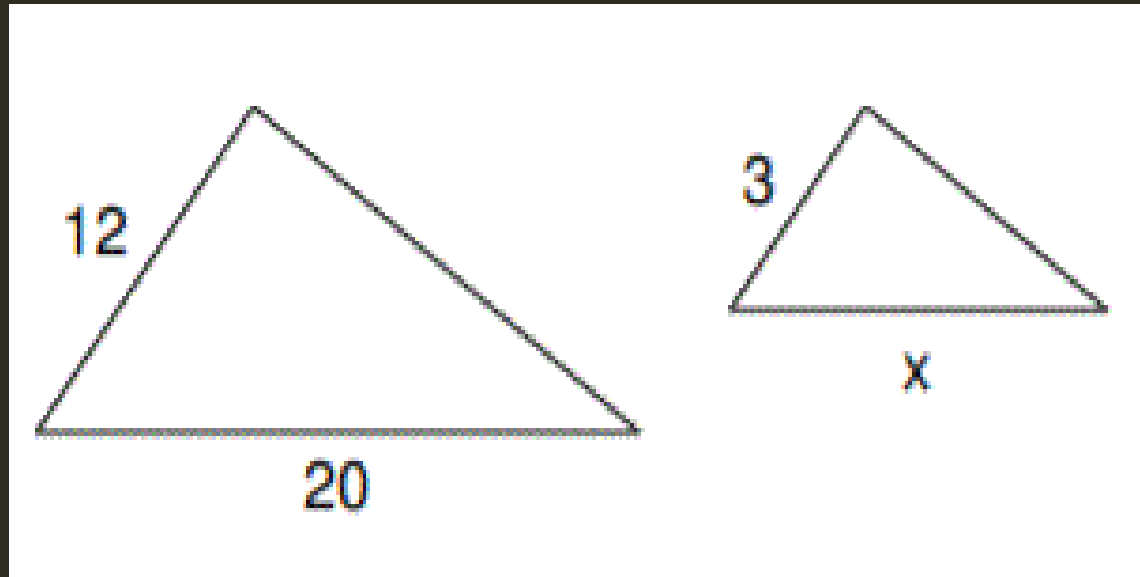**#3** $\dfrac{?}{9} = \dfrac{20}{36}$

#4 $\dfrac{40}{25} = \dfrac{?}{5}$

6

10

5

8

USING MENTAL MATH

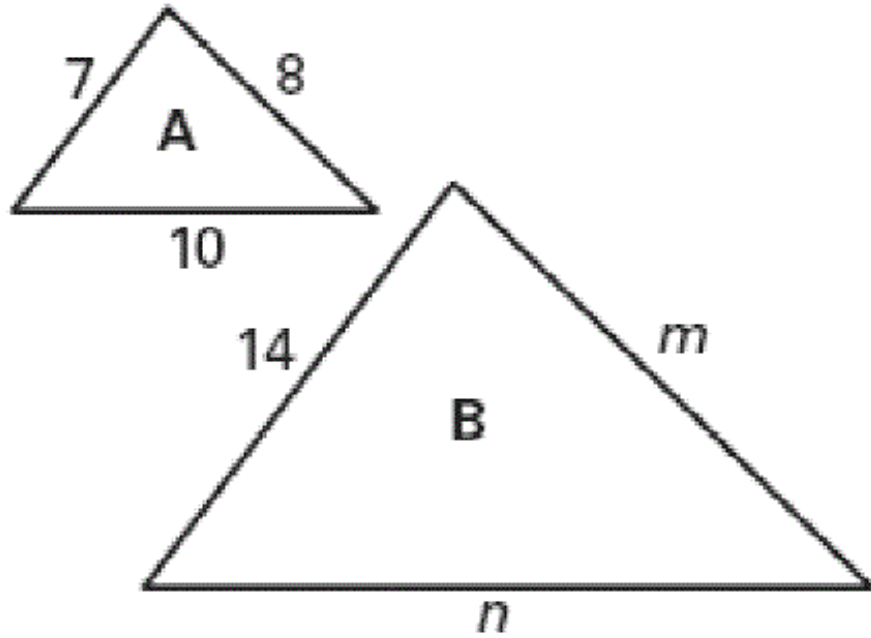How would you find the length of the missing side?

How would you find the length of the missing side?

What is 20 divided by 4?

5

The length of the missing side is 5.
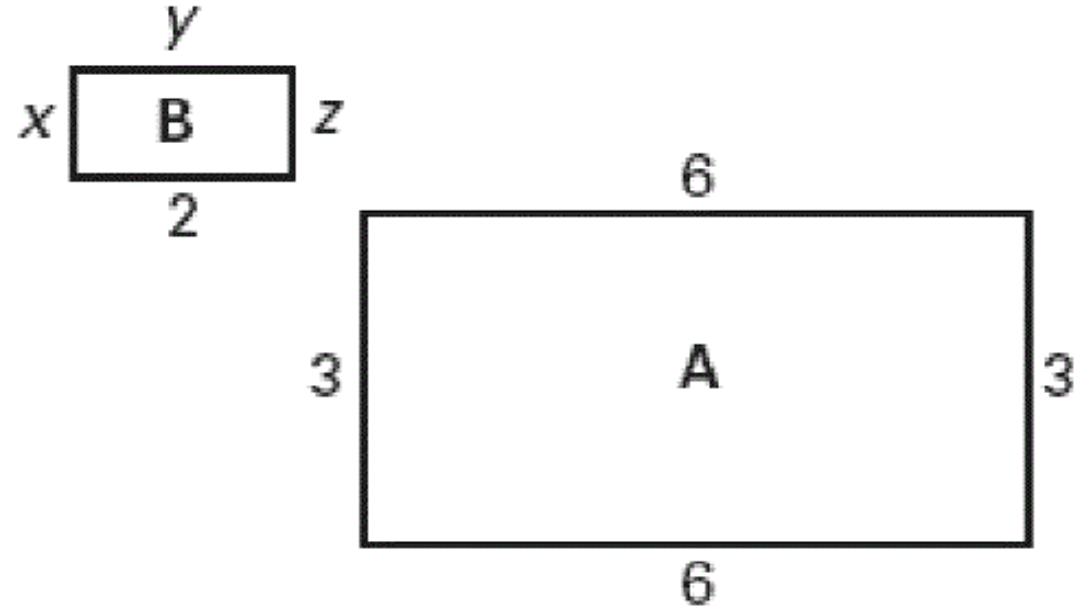
Ask yourself…

What do I do to 12 to get 3?

#1

7   8
A
10

14   m
B
n

m = __16__   n = __20__

#2

y
x [B] z
2

6
3   A   3
6

x: __1__   y: __2__   z: __1__

USING MENTAL MATH | What are the lengths of the missing sides?

SOLVING PROPORTIONS

STEPS:
1) Cross-Multiply
2) Divide.

SOLVING PROPORTIONS

STEPS

1) Cross-Multiply

2) Divide.

$$\frac{6}{12} = \frac{5}{n}$$

$$6n = 60$$

$$\frac{6n}{6} = \frac{60}{6}$$

$$n = 10$$

SOLVING PROPORTIONS

STEPS

1) Cross-Multiply

2) Divide.

$$\frac{6}{a} = \frac{3}{8}$$

$$\frac{48}{3} = \frac{3a}{3}$$

$$a = 16$$

SOLVING PROPORTIONS

STEPS

1) Cross-Multiply
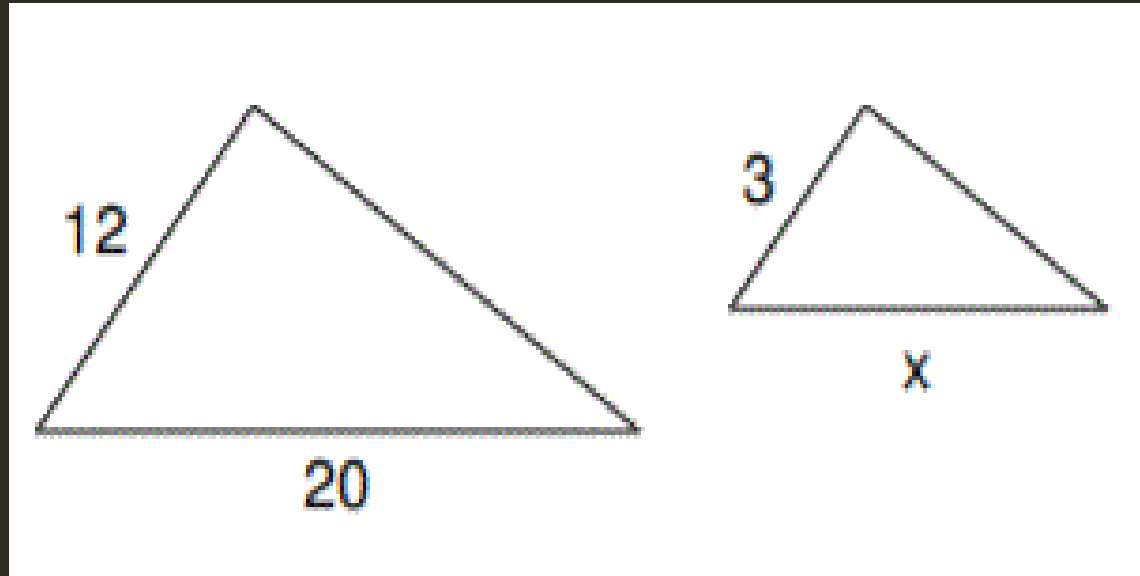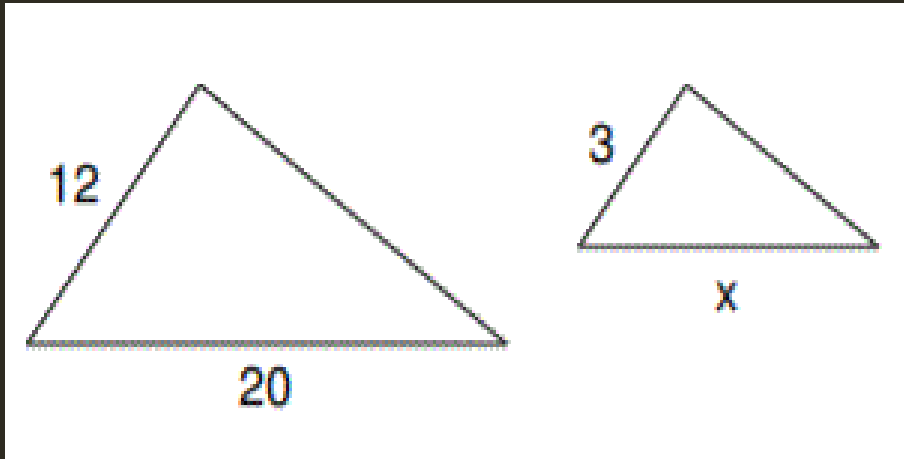
2) Divide.

$$\frac{x}{7} = \frac{6}{3}$$

$$3x = 42$$

$$\frac{3}{3} = \frac{3}{3}$$

$$x = 14$$

USING PROPORTIONS

How would you find the length of the missing side?

How would you find the length of the missing side?

12

3

12

x

20

$$\frac{12}{20} = \frac{3}{x}$$

$$12x = 60$$

$$\frac{12x}{12} = \frac{60}{12}$$

$$x = 5$$

You can set up a proportion.

Write a ratio of the sides of one triangle.

Then, match up the sides of the other

triangle to write the other ratio.