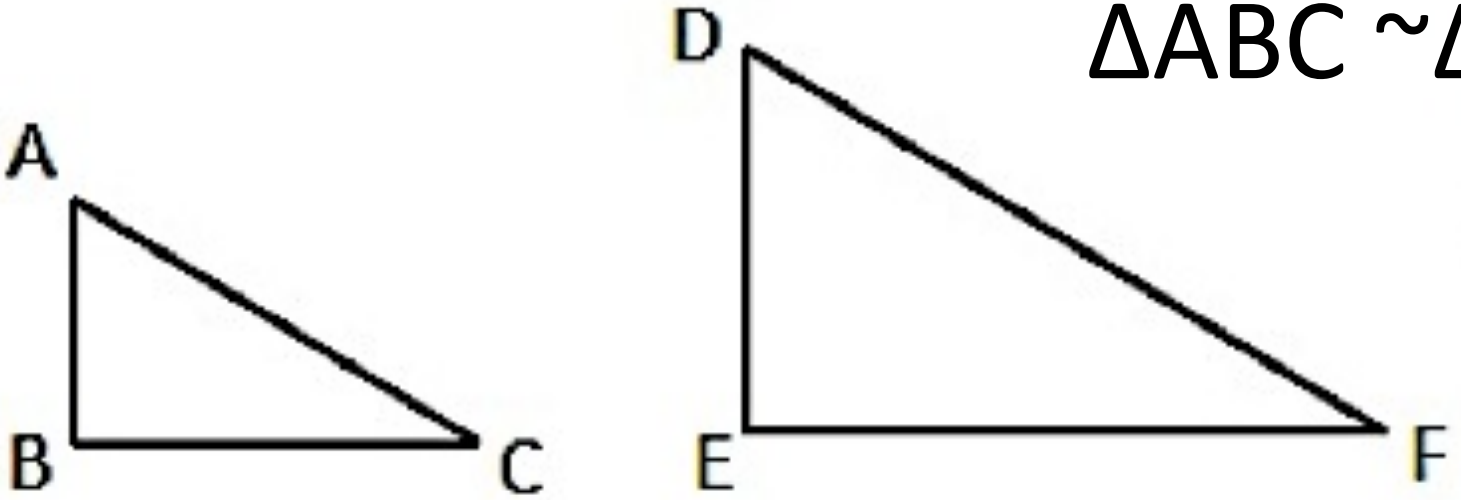
# REVIEW ON CONGRUENT AND SIMILAR TRIANGLES

$\Delta ABC \sim \Delta DEF$

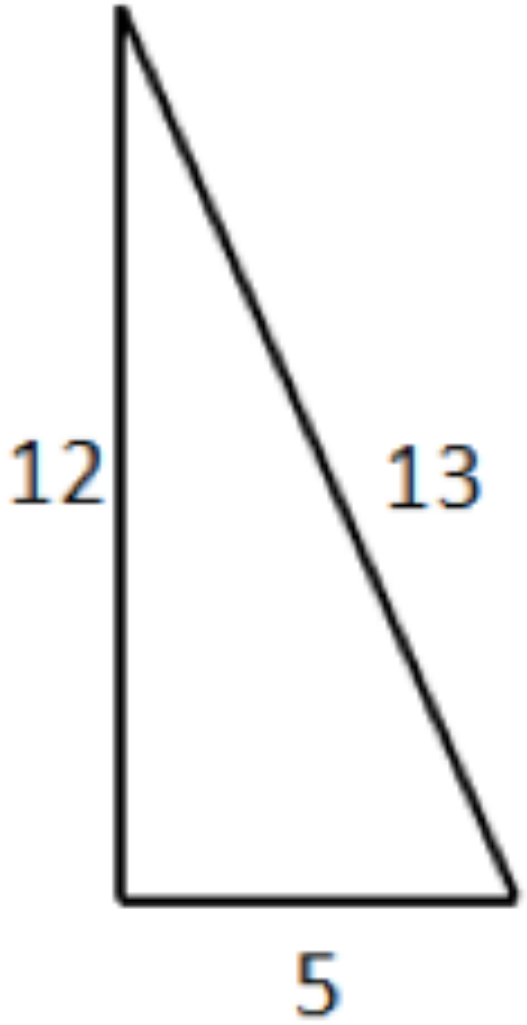


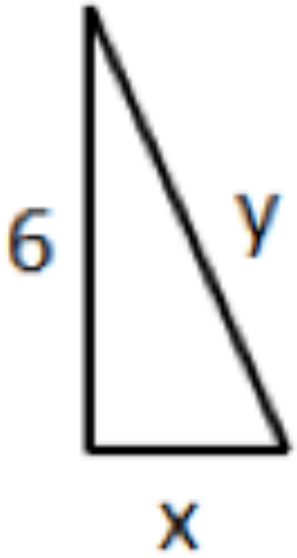

∠ABC corresponds to _____

∠BCA corresponds to _____

∠CAB corresponds to _____

# Given similar triangles, Find x and y.



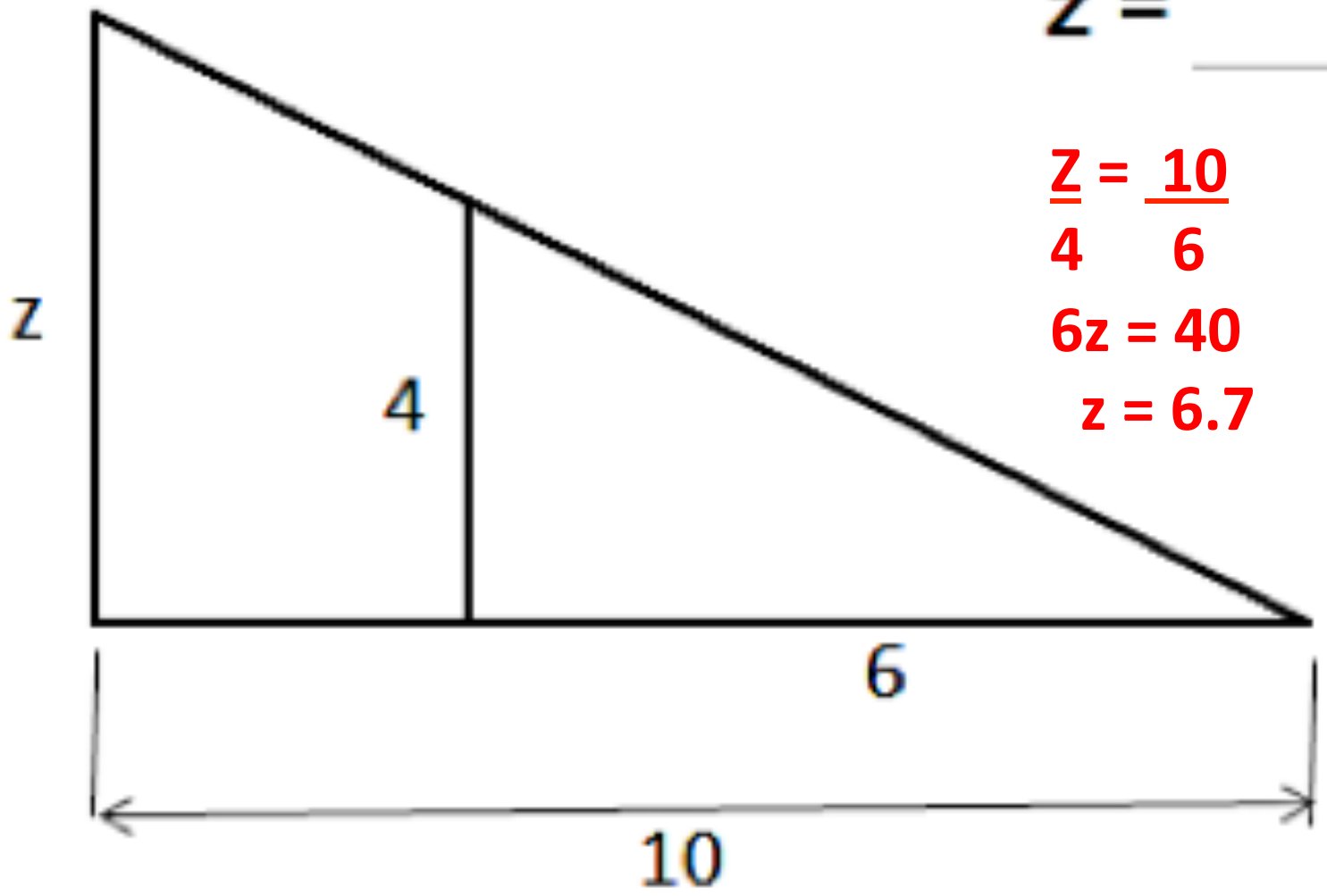




y = 6.5

x = 2.5

# Given similar triangles, Find z.

z =

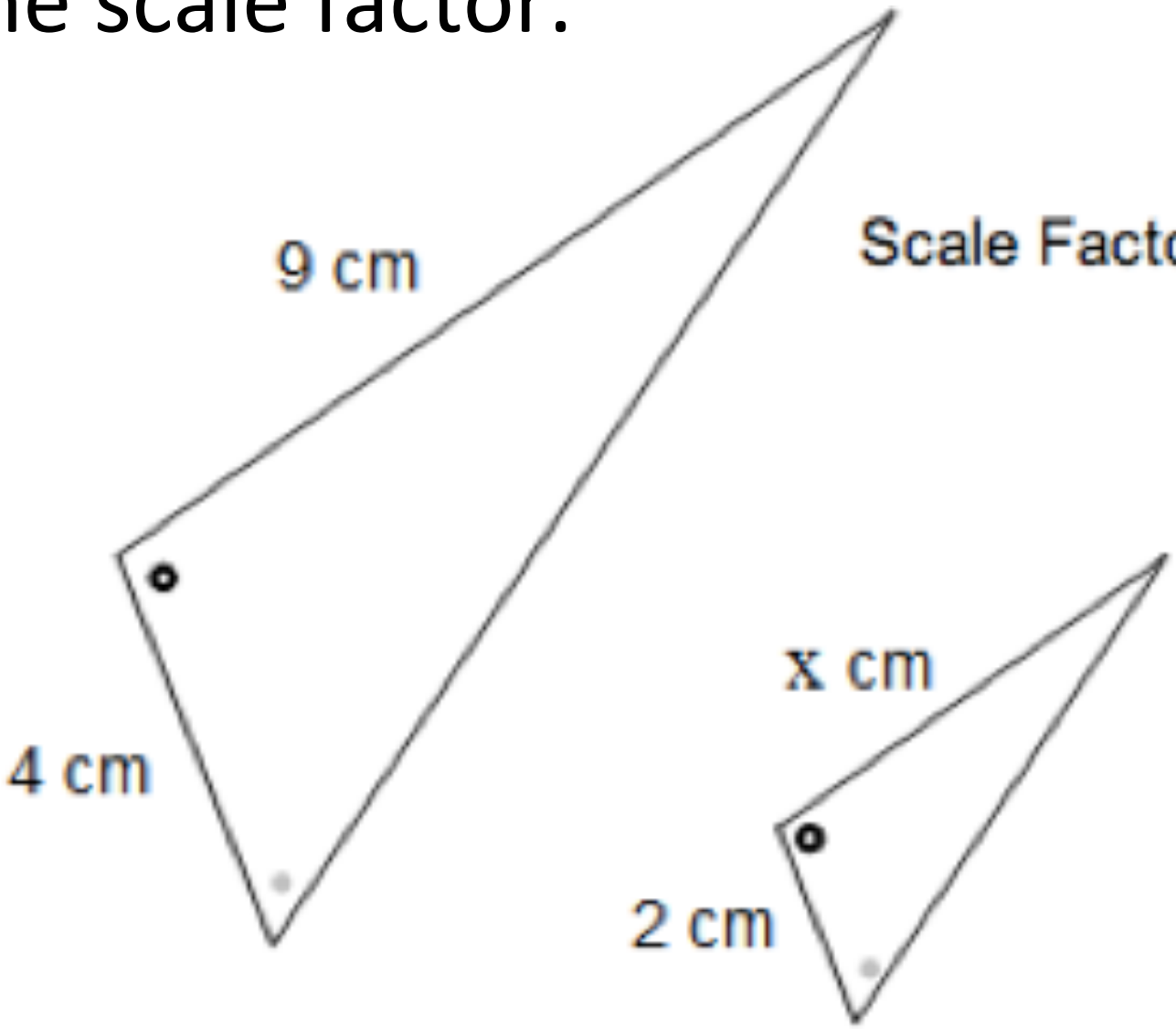



$\frac{Z}{4} = \frac{10}{6}$

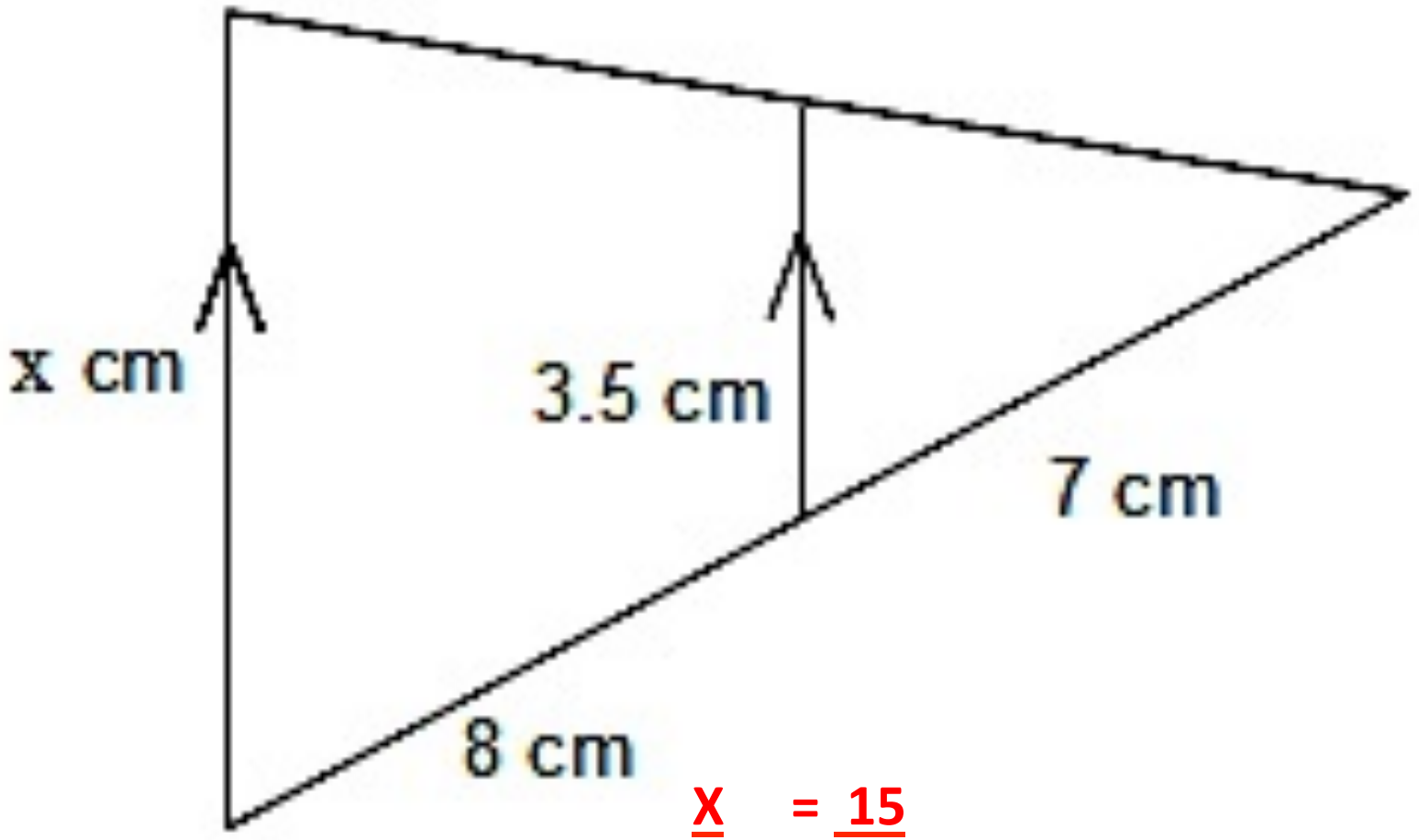
$6z = 40$

$z = 6.7$

Given similar triangles, find x and the scale factor.

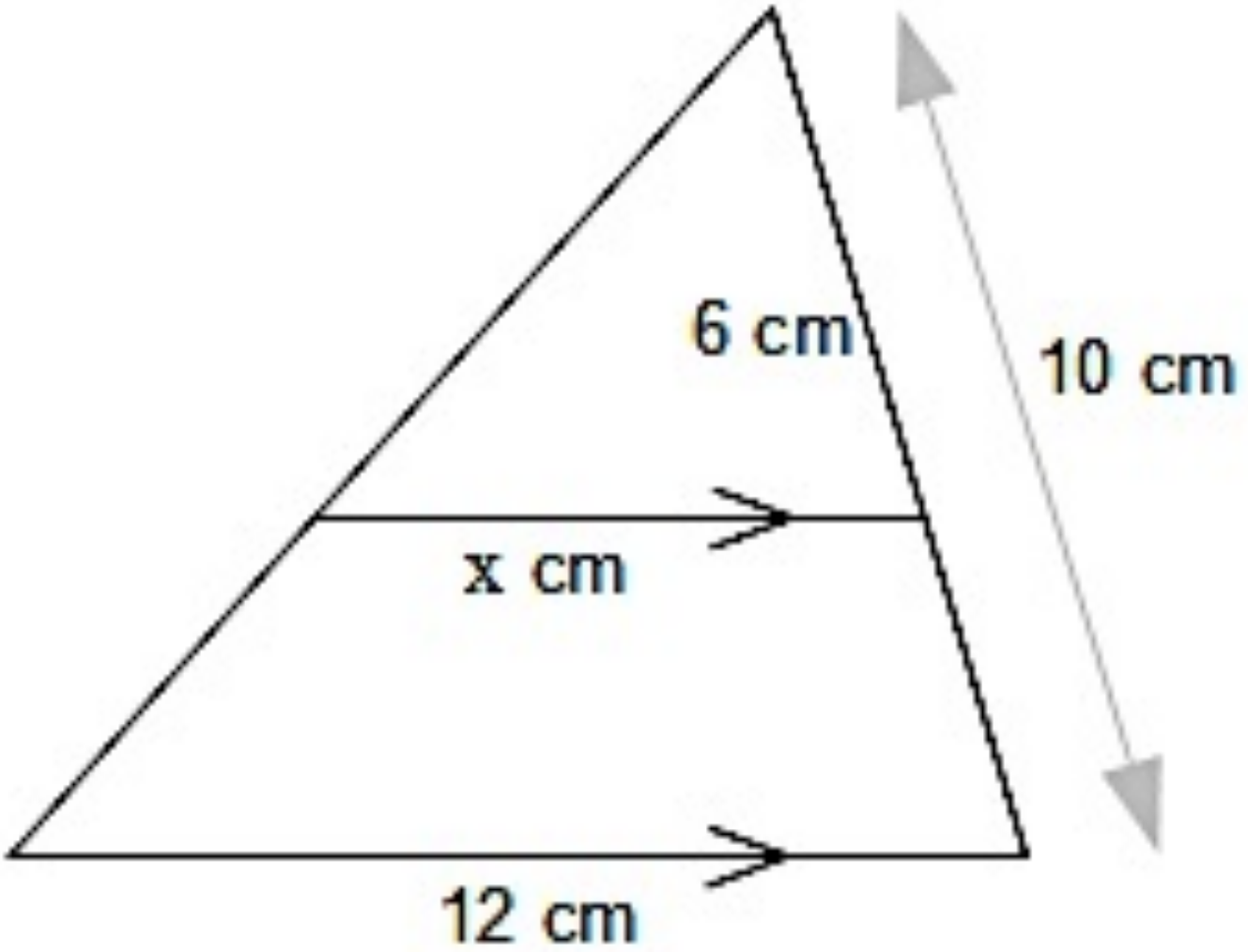



Scale Factor: 2 x = 4.5



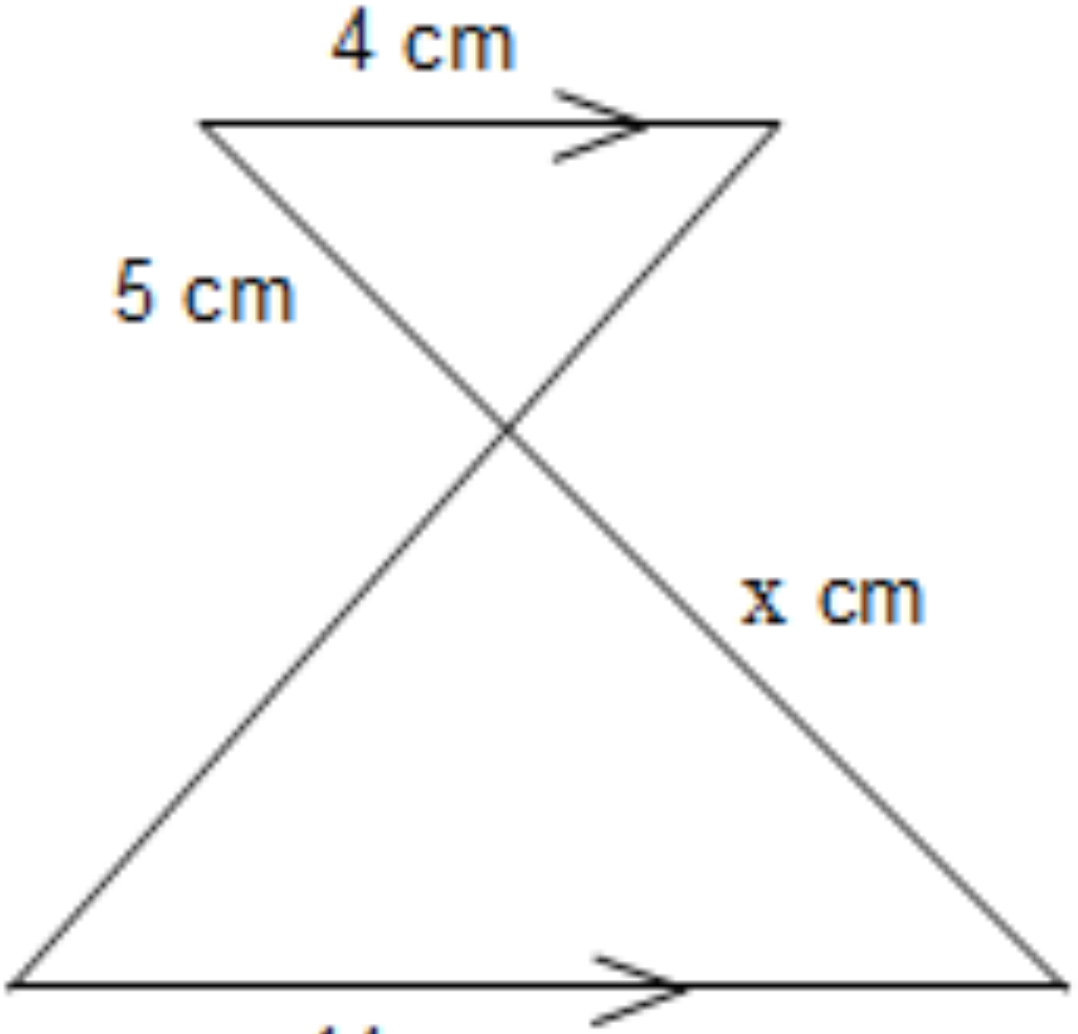

$\frac{X}{3.5} = \frac{15}{7}$

$x = X = 7.5$




$$x = \frac{12}{x} = \frac{10}{6}$$

$$X = 7.2$$




$\frac{14}{4} = \frac{x}{5}$

x =

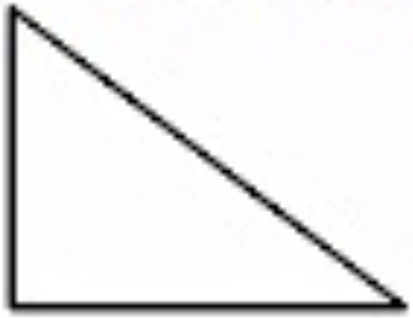
X = 17.5

Which of the following is **not** a reason two figures are congruent:

1. Same shape
2. Same number of sides
3. Same angle measurements
4. Equal line segments

**# 2. It doesn't follow that if two figures have the same number of sides, they are congruent.**

Which of the following figures may be congruent to figure below?



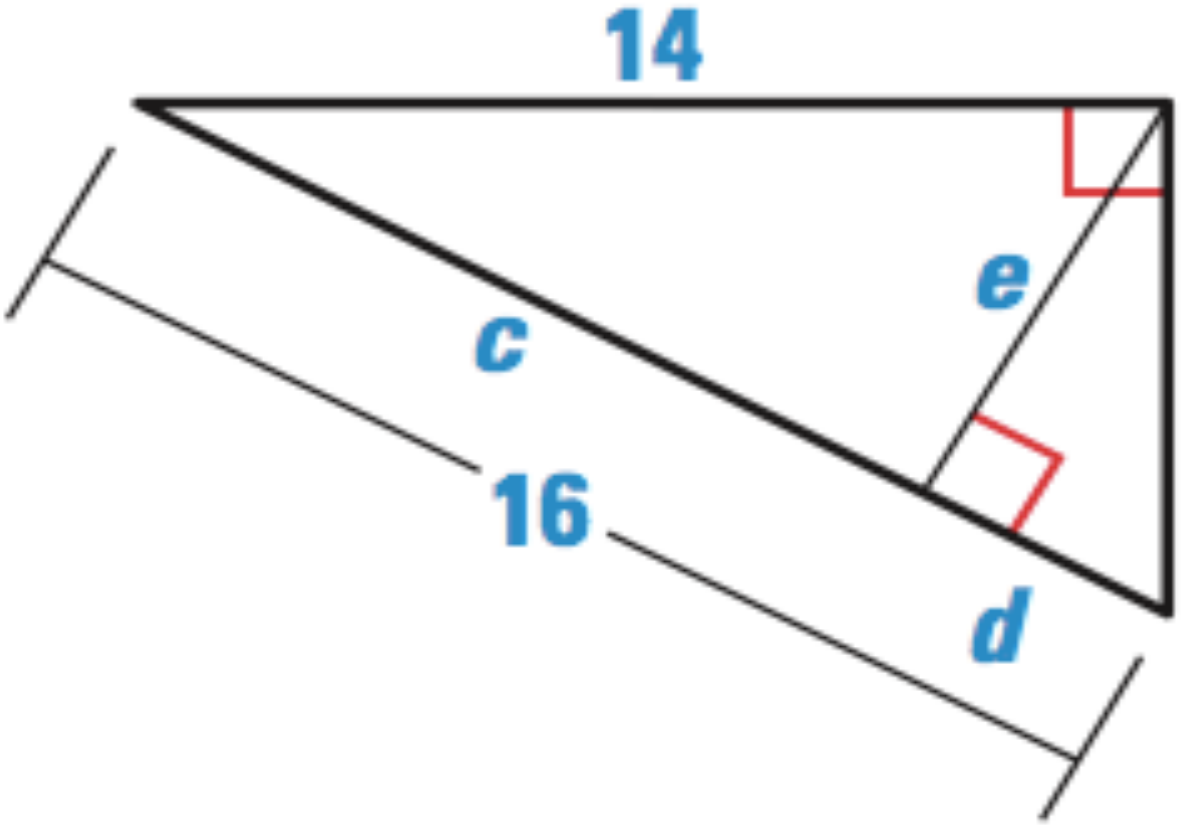
1. Square of the same size
2. Equilateral triangle
3. Right triangle of the same size
4. Right triangle of a greater size

**# 3. A right triangle of the same size may be congruent to the given figure.**

Which of the following is **not** a characteristic of similar figures?

A. Proportional sides
B. Equal angle measurements
C. Same shape
D. Congruent side lengths

**None of the above. All are characteristics of similar figures. If two figures have congruent side lengths, then they are both similar and congruent.**

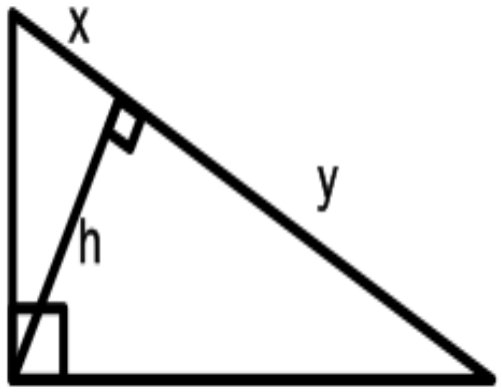



c = _____

d = _____

e = _____

$$\frac{x}{h} = \frac{h}{y}$$




$\frac{C}{14} = \frac{14}{16}$

c = 12.25

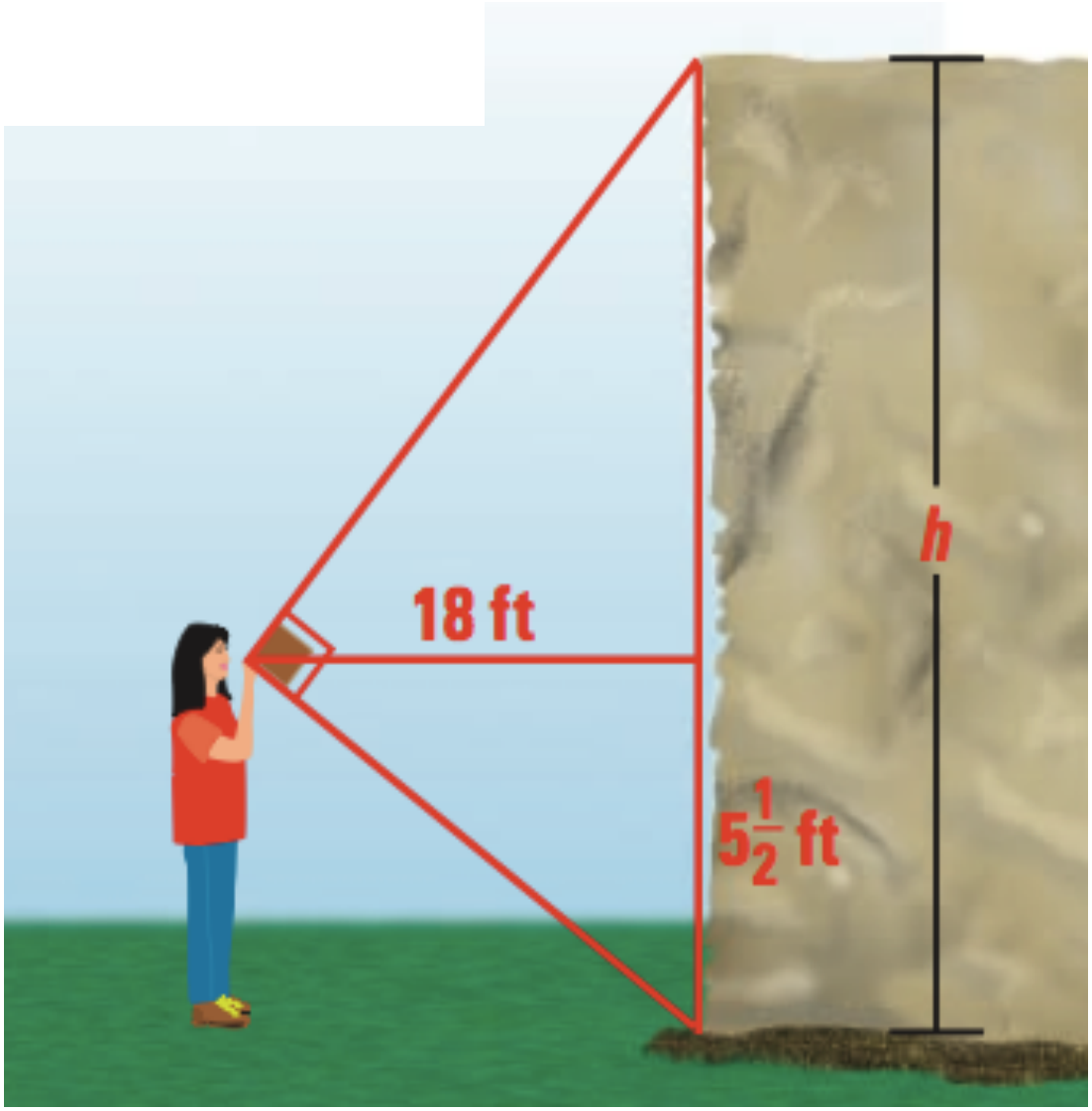
d = 16 - 12.25

d = 3.75

$\frac{3.75}{e} = \frac{e}{12.25}$

$e^2 = 45.9375$

e = 6.8




# Find h.

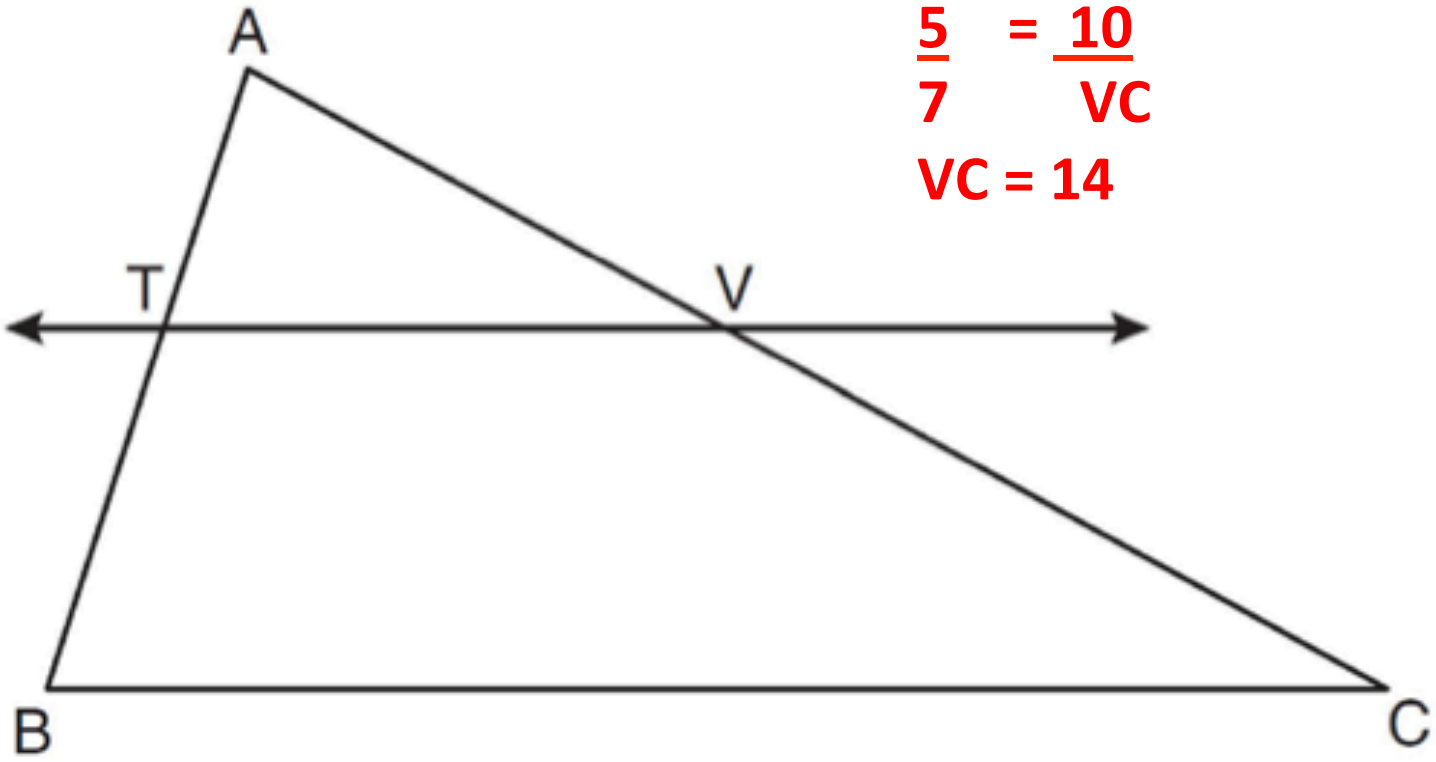
$$\frac{5.5}{18} = \frac{18}{h - 5.5}$$

$5.5h - 30.25 = 324$

$5.5h = 354.25$

$h = 64.4$ ft

In the diagram below of $\triangle ABC$, $\overleftrightarrow{TV} \parallel \overline{BC}$, $AT = 5$, $TB = 7$, and $AV = 10$.

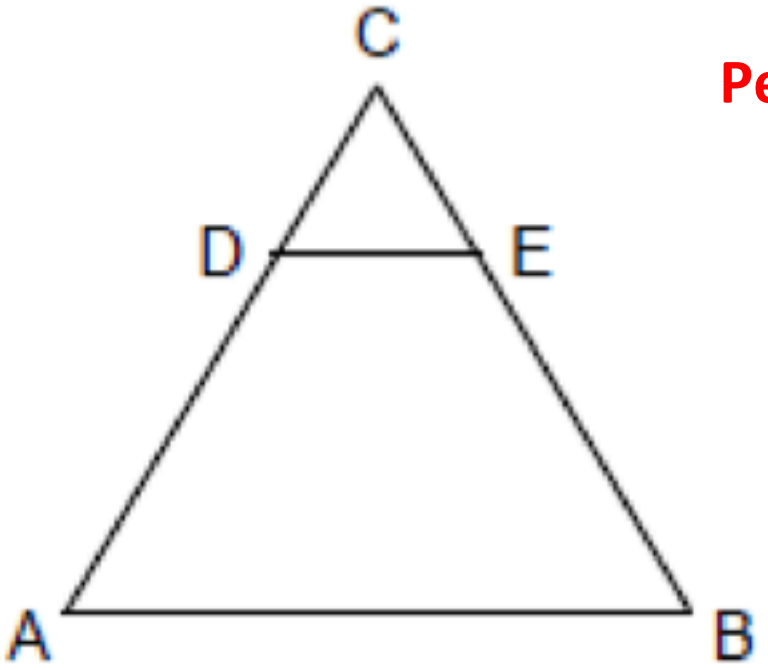



$\frac{5}{7} = \frac{10}{VC}$

$VC = 14$

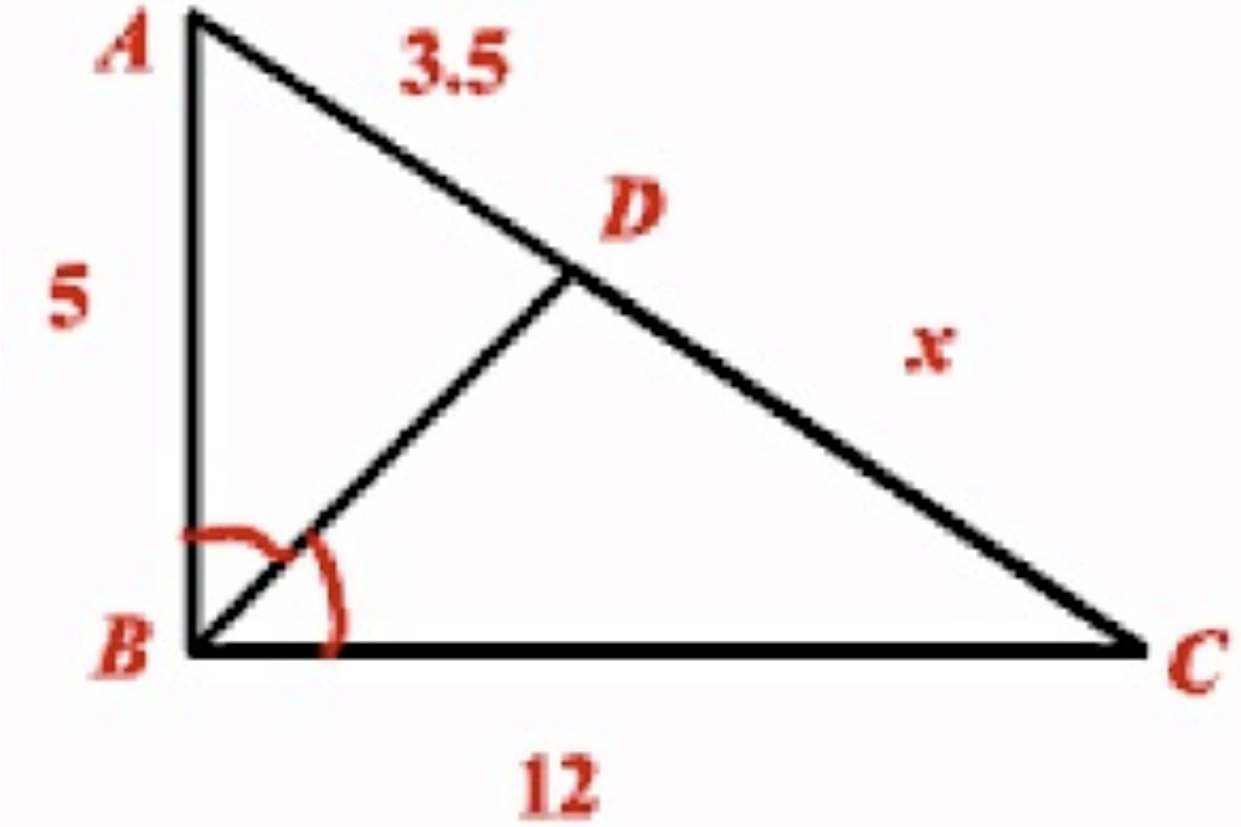
What is the length of $\overline{VC}$?

In the accompanying diagram of equilateral triangle $ABC$, $DE = 5$ and $\overline{DE} \parallel \overline{AB}$.




**Perimeter = 40**

If $AB$ is three times as long as $DE$, what is the perimeter of quadrilateral $ABED$?



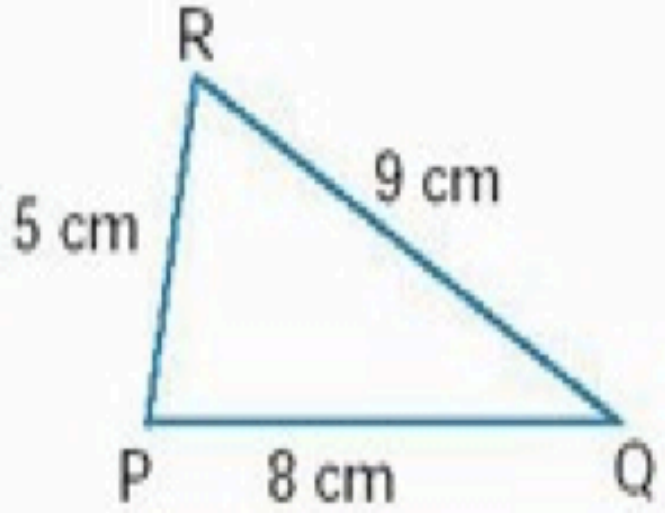

Find the value of $x$.

$\frac{X}{3.5} = \frac{12}{5}$

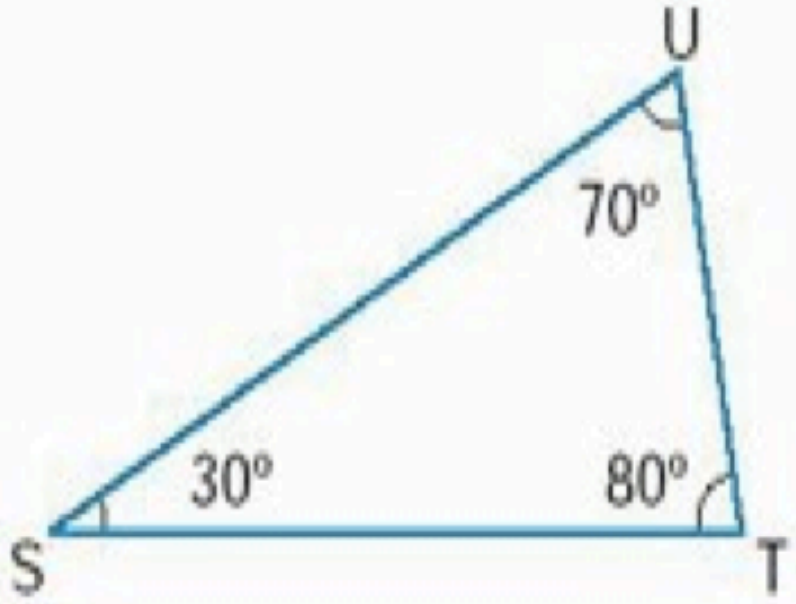
X = 8.4

Determine which of the following triangles are similar.

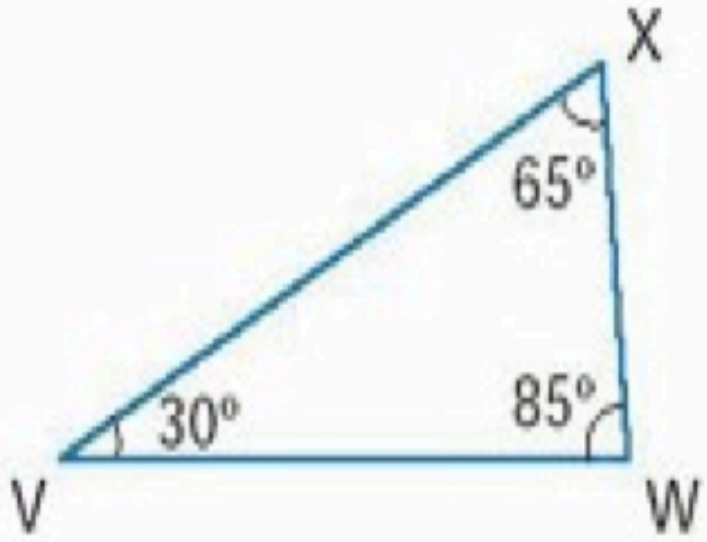
a)



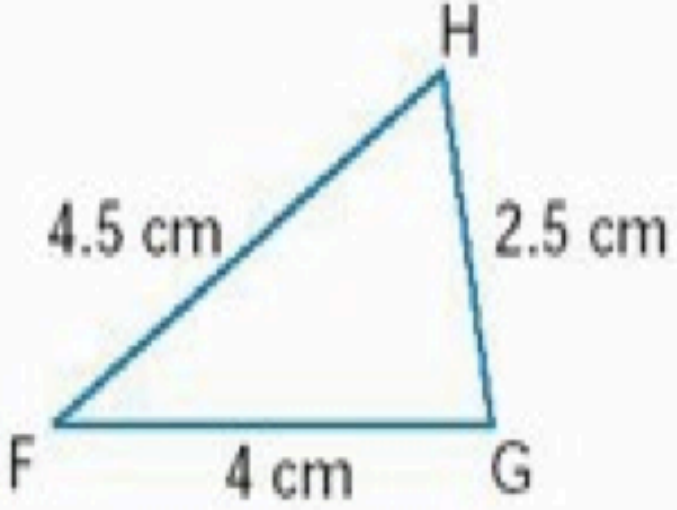

b)

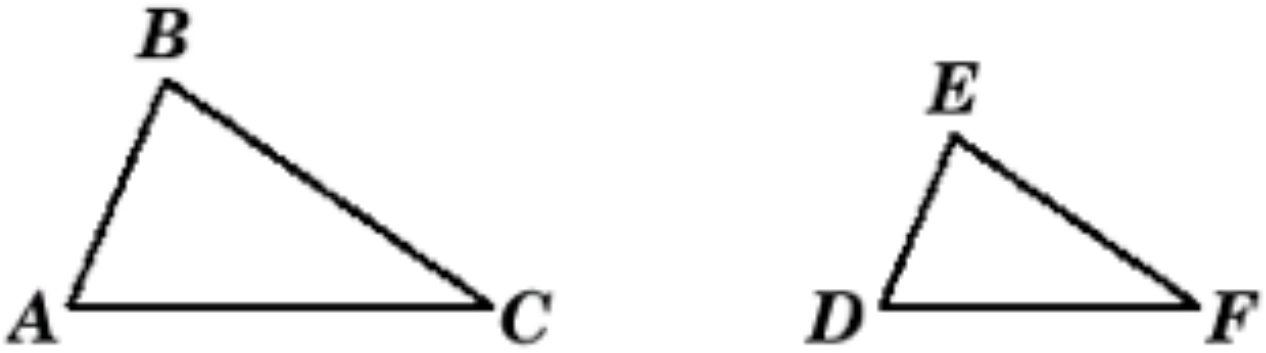



c)




d)






**If $\Delta ABC$ is similar to $\Delta DEF$, which of the following must be true?**

**A** $\frac{AB}{AC} = \frac{DE}{EF}$

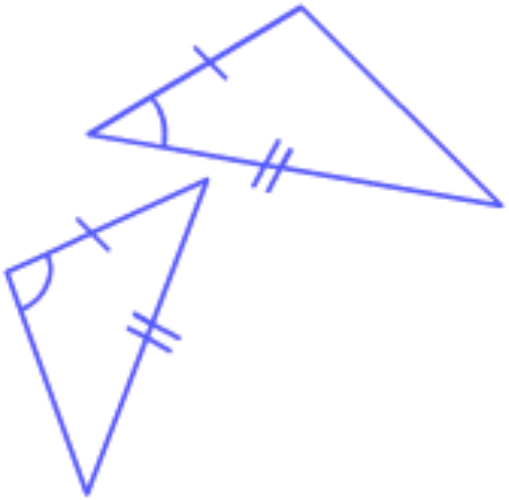
**B** $\frac{AB}{DF} = \frac{AC}{EF}$

**C** $\frac{AB}{BC} = \frac{DE}{DF}$

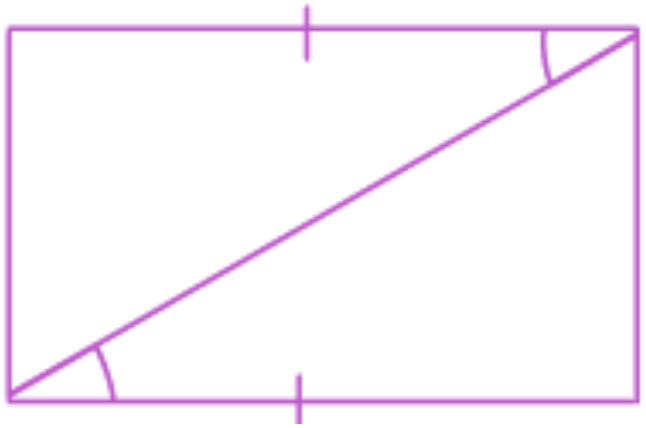
**D** $\frac{AB}{DE} = \frac{AC}{DF}$

Which of the following pairs of triangles are congruent?

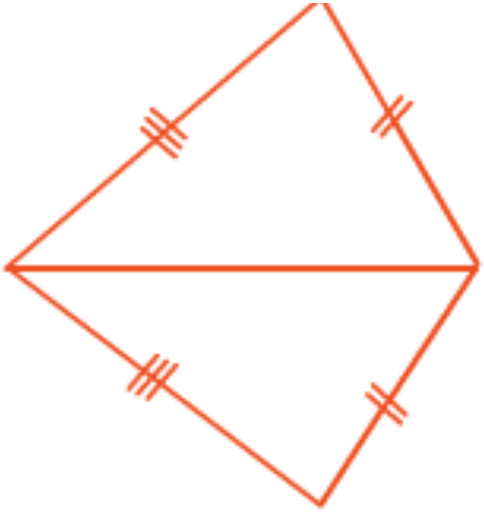
A.



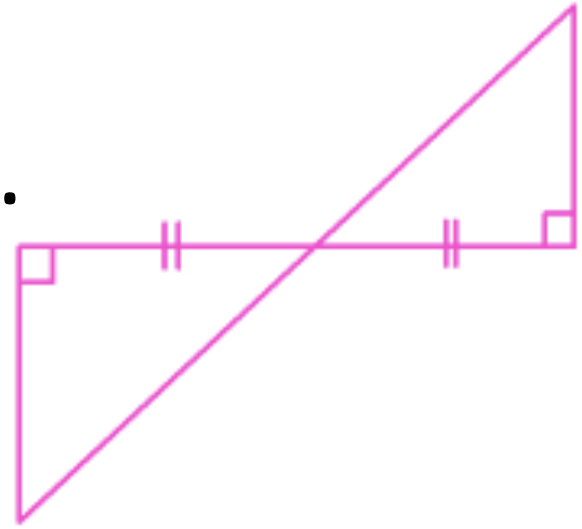
C.

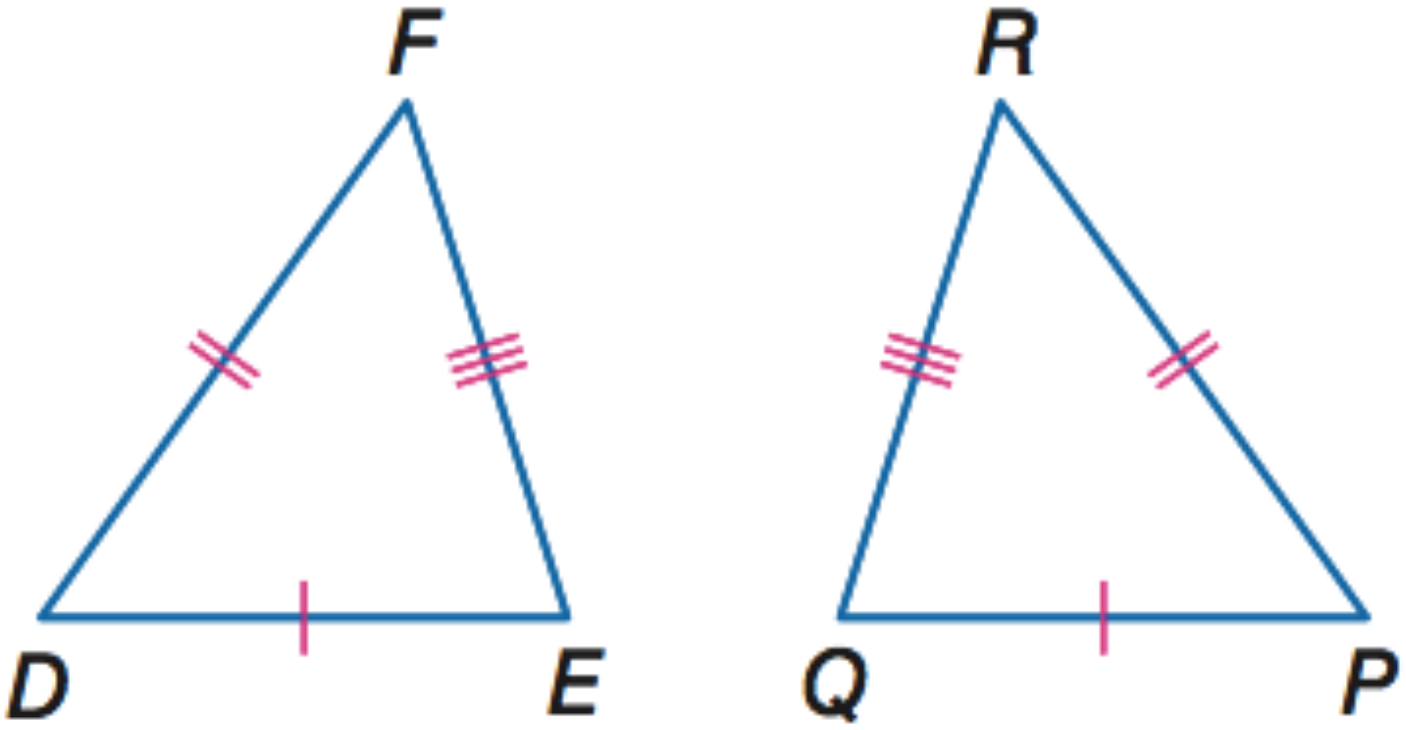


B.



D.






$\triangle DEF \cong$ ?

Which of the following statement is *not* true if $\triangle FGH \cong \triangle LMN$?

**A** $\overline{FH} \cong \overline{LN}$

**B** $\overline{GH} \cong \overline{MN}$

**C** $\angle G \cong \angle M$

**D** $\angle F \cong \angle N$

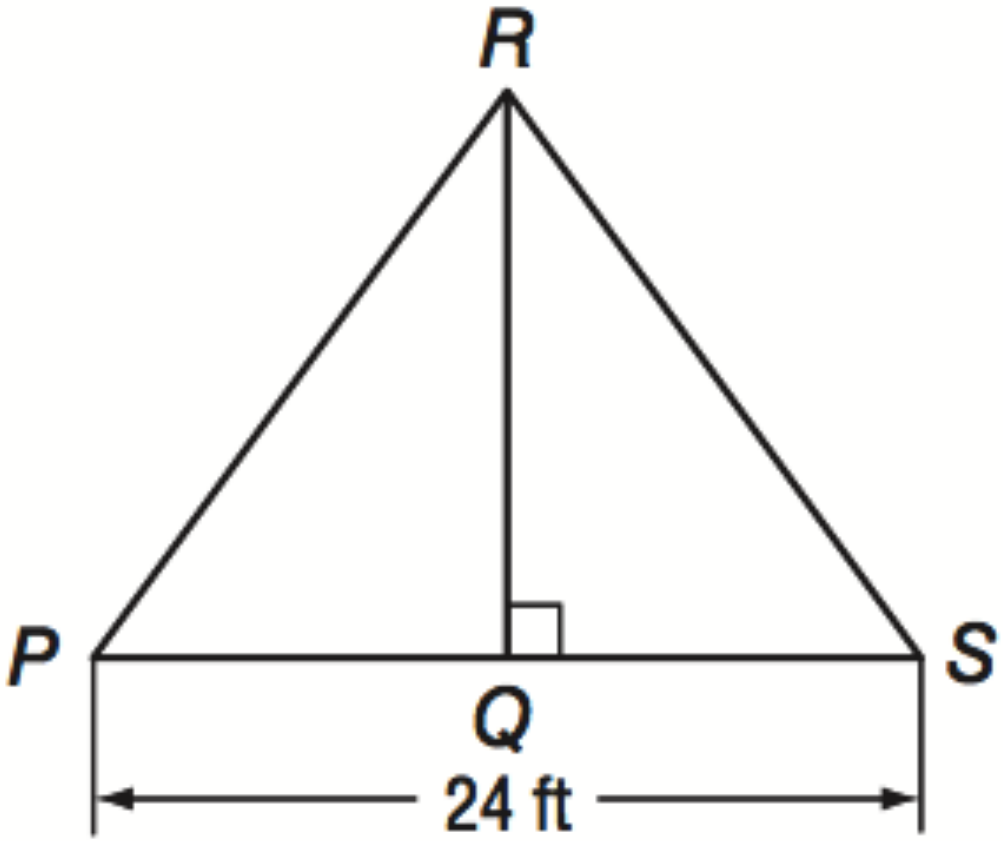
Guy–wires connected to a telephone pole create two congruent triangles $\triangle PQR$ and $\triangle SQR$. Find the length of $\overline{QS}$.

**F** 12 ft

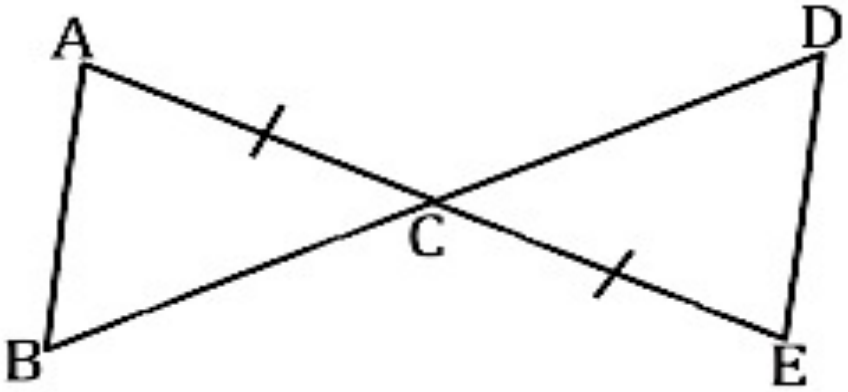
**G** 24 ft

**H** 48 ft

**J** 65 ft



Given $\overline{AB} \parallel \overline{ED}$, $\overline{AC} \cong \overline{EC}$

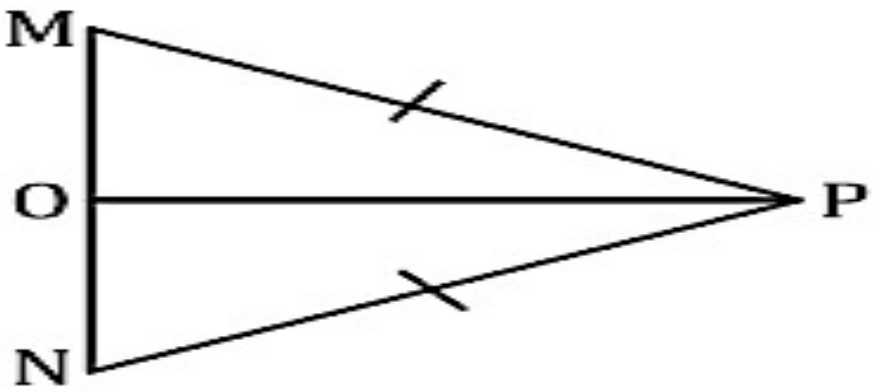



Prove: $\triangle ABC \cong \triangle EDC$

| | |
|---|---|
| AC ≅ EC | – Given |
| AB \|\| ED | - Given |
| angle A ≅ angle E | - Alternate interior angles |
| Angle ACB ≅ angle ECD | – Vertical angles |
| Δ ABC ≅ Δ EDC | – ASA |

NOTE: The last statement is the one you want to prove. In proving triangles congruent, the reason may be any of the 5 postulates/theorems (review past notes).

Given: $\overline{MP} \cong \overline{NP}$, $\overline{MN} \perp \overline{OP}$




Prove: $\overline{MO} \cong \overline{ON}$

| | |
|---|---|
| MP ≅ NP | – Given |
| $\overline{MN} \perp \overline{OP}$ | - Given |
| MOP & NOP are right angles | - def. of perpendicular |
| OP ≅ OP | – Reflexive property |
| Δ MOP ≅ Δ NOP | – HL (Hypotenuse-Les) |
| MO ≅ ON | – CPCTC |

NOTE: To show that corresponding parts are congruent, show first that two triangles are congruent.

http://www.glencoe.com/sec/math/brainpops/00112049/00112049.html

SIMILAR TRIANGLES QUIZ

http://www.studyzone.org/mtestprep/math8/g/meanmedmodquiz.cfm

MEAN, MEDIAN, MODE QUIZ