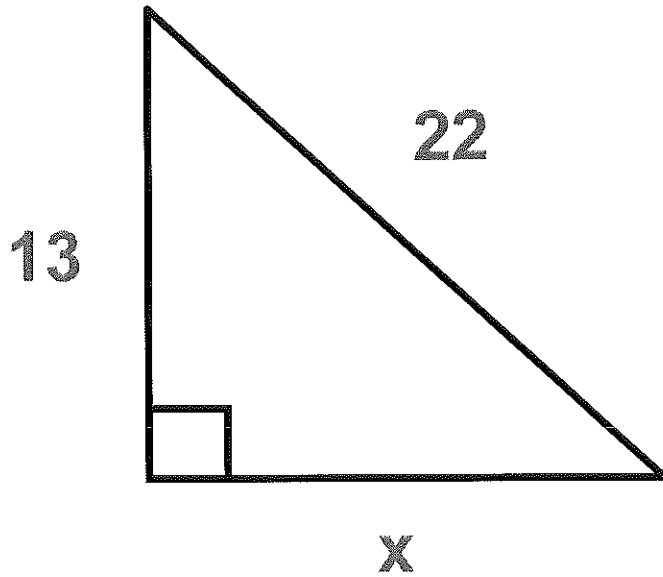


**solve for x**



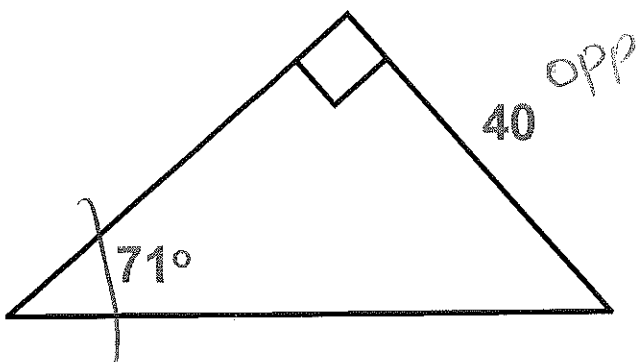
$$x^2 + 13^2 = 22^2$$

$$x^2 + 169 = 484$$

$$x^2 = 315$$

$$x = 3\sqrt{35}$$

**2**



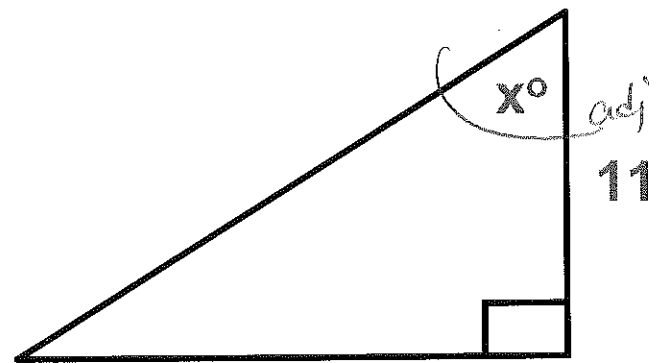
x hyp

$$\sin 71 = \frac{40}{x}$$

$$x = \frac{40}{\sin 71}$$

$$x = 42.3$$

**solve for x**



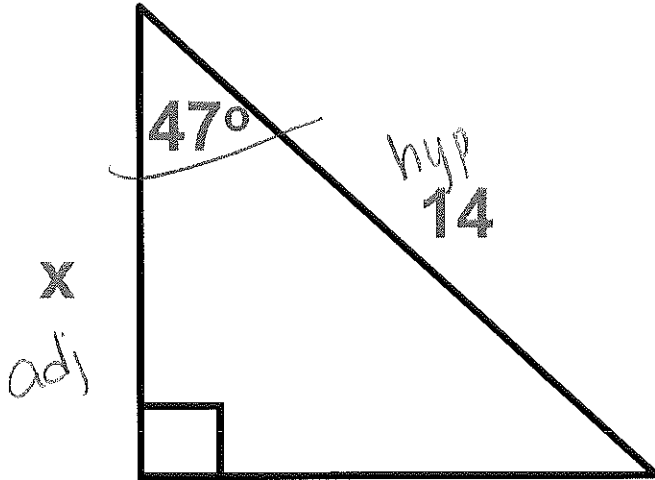
6 opp

$$\tan x = \frac{6}{11}$$

$$\tan^{-1}\left(\frac{6}{11}\right)$$

$$x = 28.6^\circ$$

3



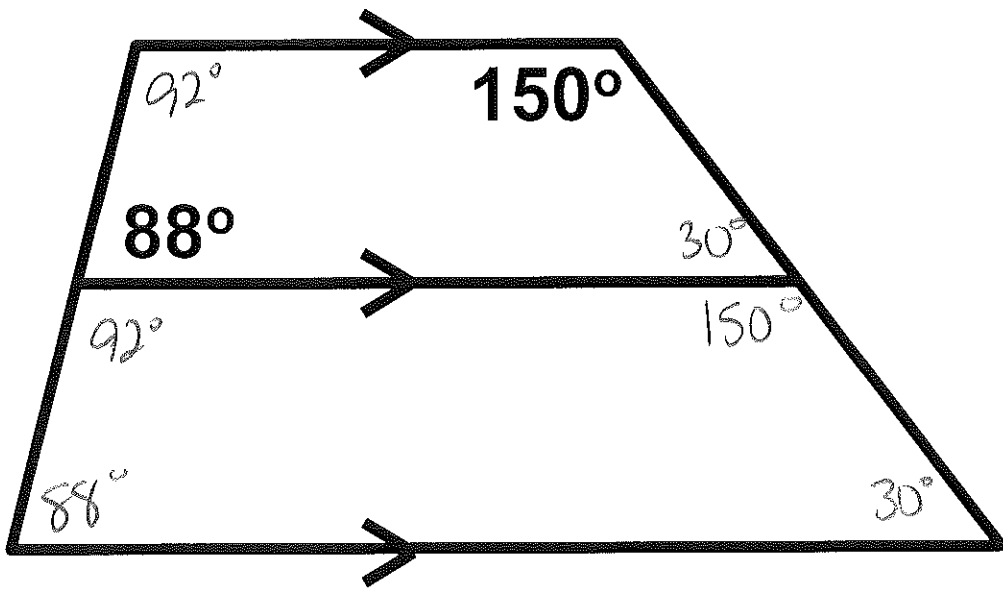
**solve for x**

$$\cos 47 = \frac{x}{14}$$
$$14 \cos 47 = x$$

$x = 9.5$

4

**Fill in each missing angle**



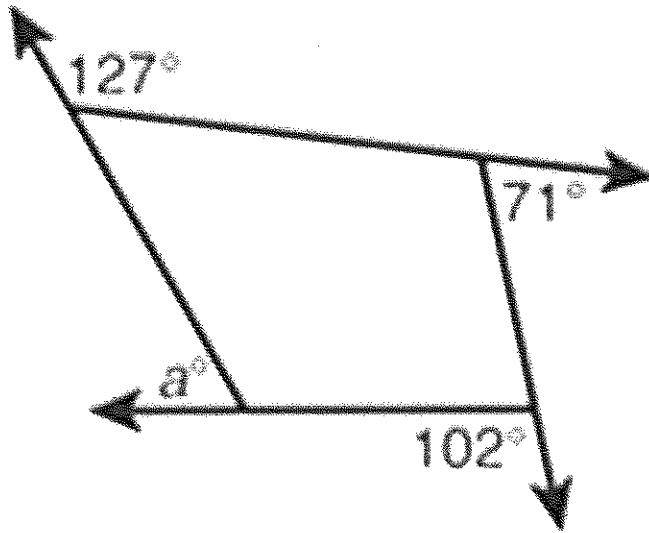
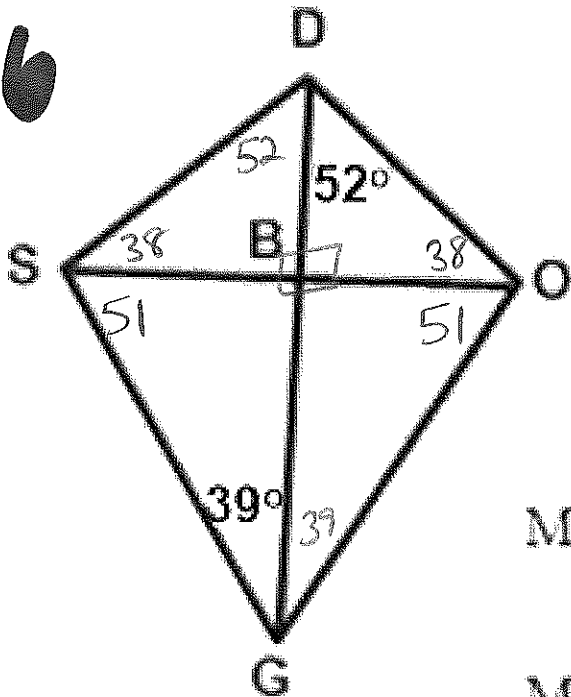
**5**

What is the value of  $a$ ?

$$127 + 71 + 102 + a = 360$$

$$300 + a = 360$$

$$a = 60^\circ$$

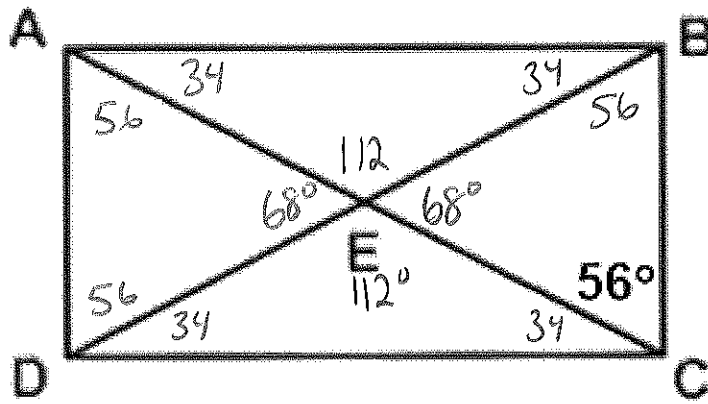
**6**

$$m\angle DBO = \underline{90^\circ} \quad m\angle DOB = \underline{38^\circ}$$

$$m\angle OGB = \underline{39^\circ} \quad m\angle GOB = \underline{51^\circ}$$

$$m\angle DSG = \underline{89^\circ} \quad m\angle SBG = \underline{90^\circ}$$

7

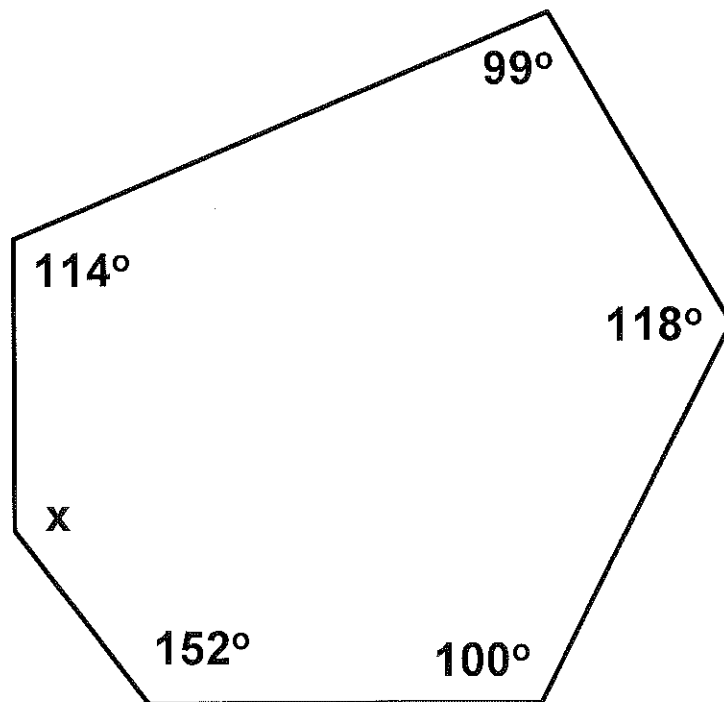


$$m\angle BAD = \underline{90^\circ} \quad m\angle BAC = \underline{34^\circ}$$

$$m\angle ABD = \underline{34^\circ} \quad m\angle AEB = \underline{112^\circ}$$

$$m\angle AED = \underline{68^\circ} \quad m\angle DCE = \underline{34^\circ}$$

8

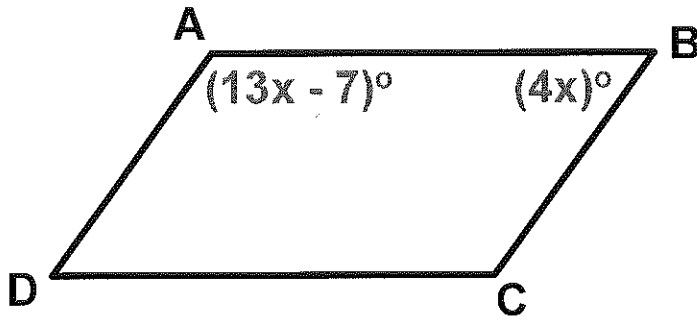


Add up to  
 $180(b-2) = 720$

$$583 + x = 720$$

$$x = 137^\circ$$

9



$$13x - 7 + 4x = 180$$

$$17x - 7 = 180$$

$$17x = 187$$

$$x = 11$$

$x = \underline{11}$

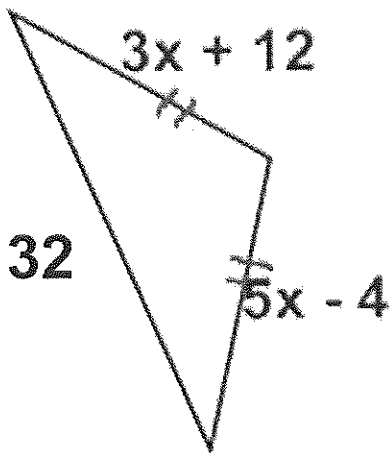
$m\angle A = \underline{136^\circ}$

$m\angle B = \underline{44^\circ}$

$m\angle C = \underline{136^\circ}$

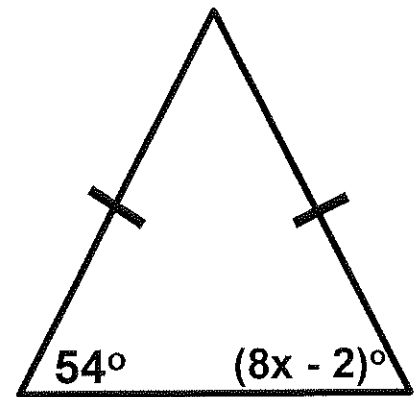
$m\angle D = \underline{44^\circ}$

10



$$3x + 12 = 5x - 4$$

$$16 = 2x$$



$$54 = 8x - 2$$

$$56 = 8x$$

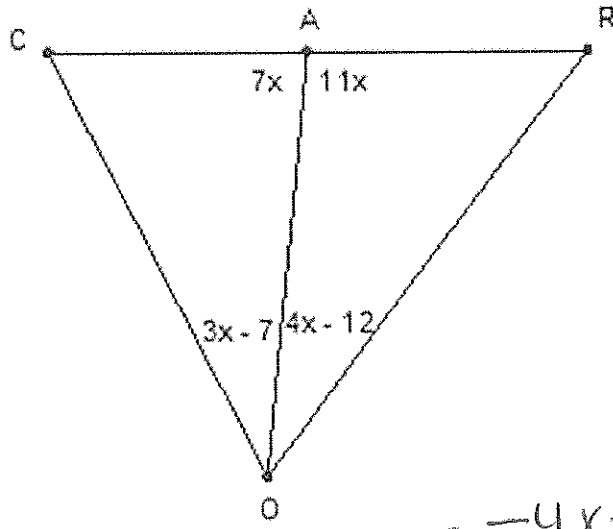
$x = \underline{8}$

$x = \underline{7}$

11

$\overline{OA}$  is an angle bisector

$$x = \underline{5}$$



$$3x - 7 = 4x - 12$$

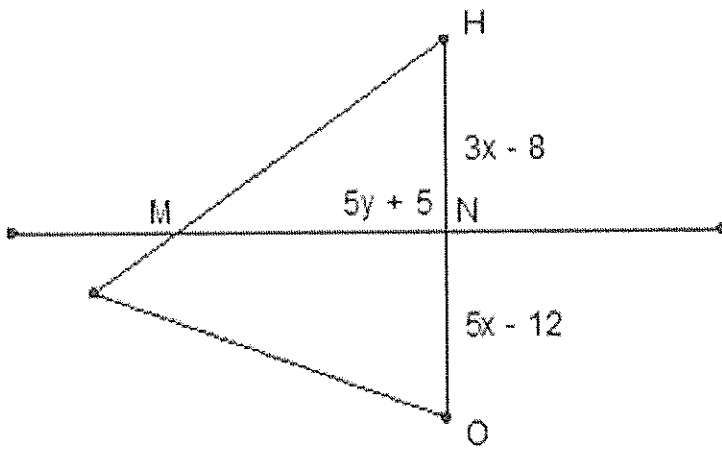
$$5 = x$$

12

$\overline{MN}$  is a perpendicular bisector

$$x = \underline{2}$$

$$y = \underline{17}$$



$$5y + 5 = 90$$

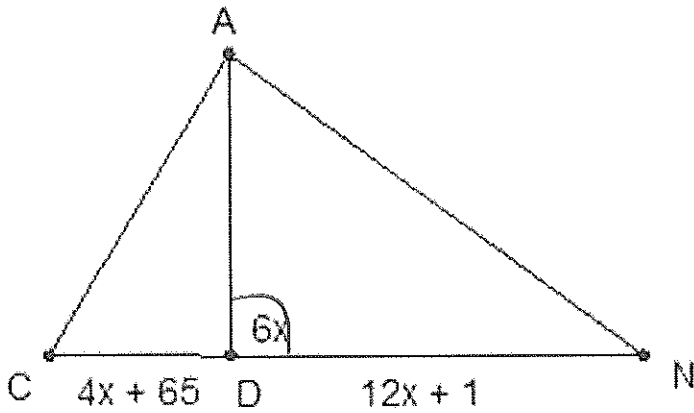
$$3x - 8 = 5x - 12$$

$$4 = 2x$$

13

$\overline{AD}$  is an altitude

$x = \underline{15}$

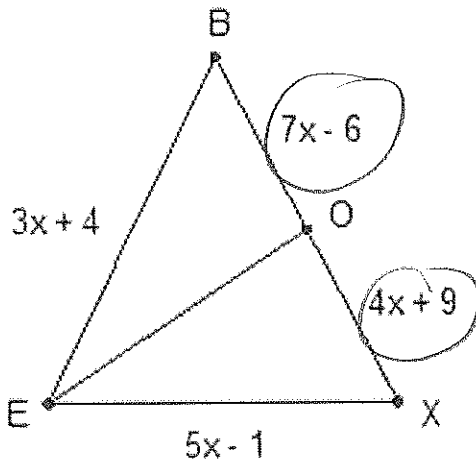


$6x = 90$

14

$\overline{EO}$  is a median

$x = \underline{5}$

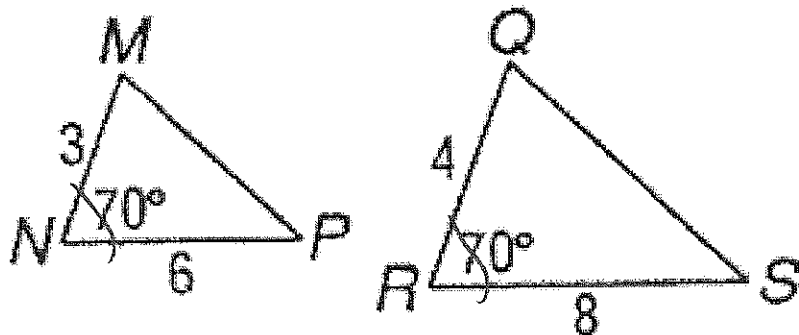


$7x - 6 = 4x + 9$

$3x = 15$

15

Determine if the triangles are similar. If so, state the reason, write a similarity statement, and give the scale factor.



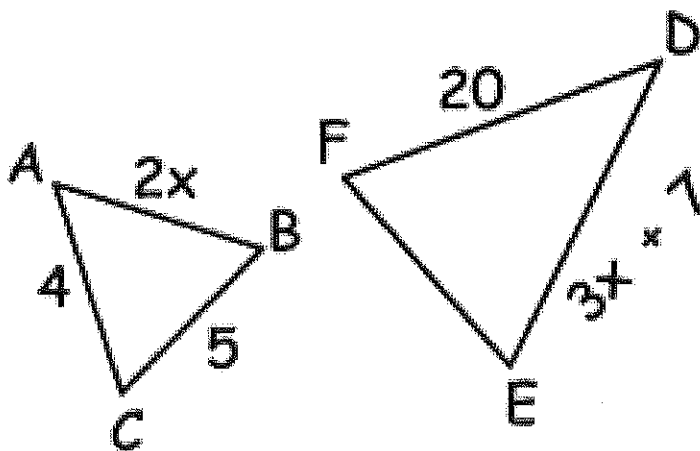
$$\frac{3}{4} = \frac{6}{8} \checkmark$$

SAS  
 $\triangle MNP \sim \triangle RQS$

$$\frac{3}{4}$$

16

$\triangle ABC \sim \triangle DEF$ . Find the value of  $x$ .



$$\frac{2x}{3x+7} = \frac{4}{20}$$

$$40x = 12x + 28$$

$$28x = 28$$

$$\boxed{x=1}$$