

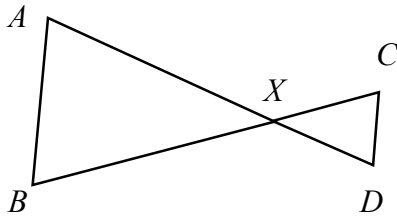
Similar Polygon – Triangle Theorems

Strategy:

1. Line \parallel to one side, divides the sides proportionately.
2. Ray bisects an \angle , divides opposite side into segments whose lengths are proportional to the lengths of the other 2 sides.

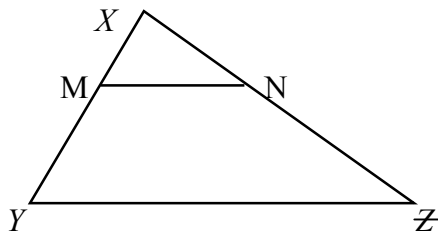
Name the similar 's

①.



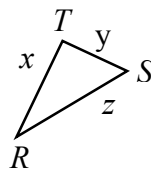
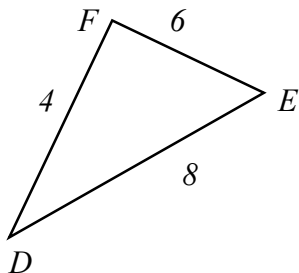
Given: $\angle A \cong \angle D$

②.



Given: $\triangle XYZ$
 $\angle Y \cong \angle XMN$

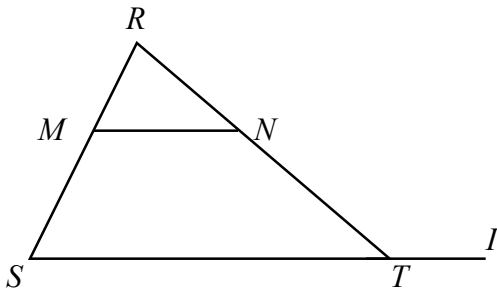
③.



Give: $\triangle DEF \sim \triangle RST$
 perimeter of $\triangle RST$ is 12

Find x, y, z

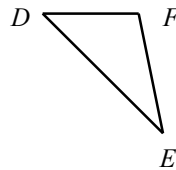
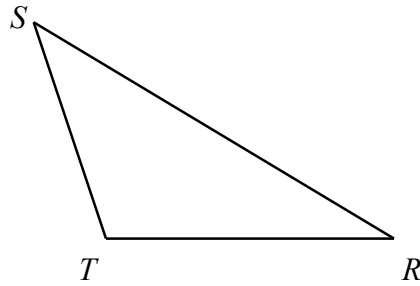
4.



Give: $RM = 3$, $MS = 4$
 $NT = 5$

Find RT

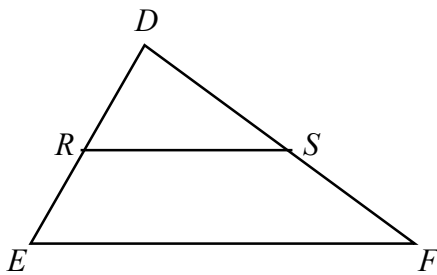
5.



Give $\triangle RST \sim \triangle DEF$

if $m\angle S = 42$, $m\angle F = 8 + 6$ and $m\angle D = 44$, Find x

6.

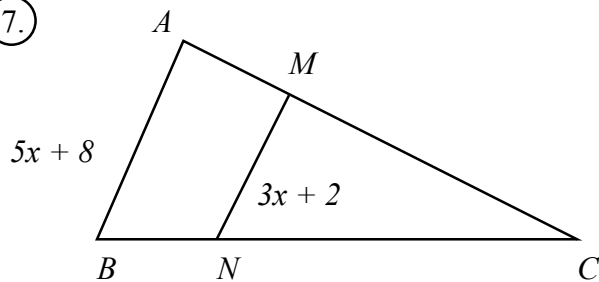


Give $\triangle DEF$

$\overline{RS} \parallel \overline{EF}$

Find SF , if $DR = 4$, $RE = 5$, and $DS = 5$

7.

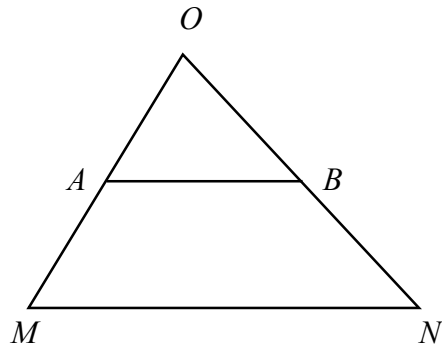


Give: $\triangle ABC$

$\overline{MN} \parallel \overline{BC}$

Find x

8.



Given: $\triangle OMN$

$\overline{AB} \parallel \overline{MN}$

Find x :

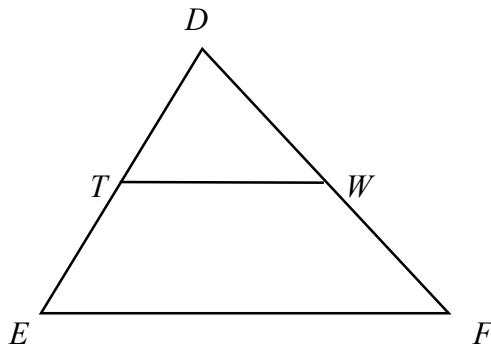
$AM = 4x - 6;$

$BN = 6x - 5$

$OM = 2x + 6;$

$ON = 8x - 2$

9.



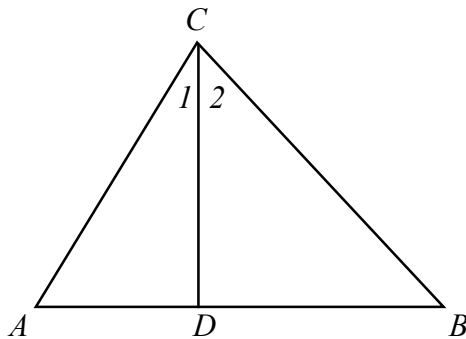
Given: $\triangle DEF$

$\overline{TW} \parallel \overline{EF}$

$DW = 8, \quad WF = 4, \quad EF = 14$

Find TW

10.



Given: $\triangle ABC$

$\angle 1 \cong \angle 2$

$AD = 5, \quad AC = 9 \quad \text{and} \quad BC = 18$

Find DB

11.

In $\triangle GHK$, E is between G and H , \overline{KE} bisect $\angle GKH$
 if $GE = 8$, $EH = 5$, and $GK = 12$
 find KH