

Day 5

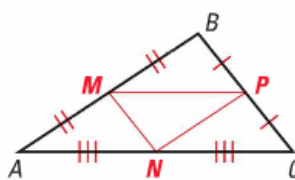
5.4 The Triangle Midsegment Theorem



To prove and use properties of triangle midsegments.

Midsegment: A segment that joins the midpoints of two sides of the triangle.

Midsegment Triangle: Formed by 3 midsegments of a triangle.

Theorem	Hypothesis	Conclusion
<p><b>Triangle Midsegment Theorem:</b></p> <p>A midsegment of a triangle is <u>parallel</u> to a side of the triangle, and its length is <u>half</u> the length of that side.</p>	 <p>IF MP is a midsegment...</p>	<p>then:</p> <p><math>MP = \frac{1}{2}AC</math></p> <p>and</p> <p><math>\overline{MP} \parallel \overline{AC}</math></p>

Use the diagram to solve 1-6.

1)  $\overline{UW}$  is a midsegment of  $\triangle RST$

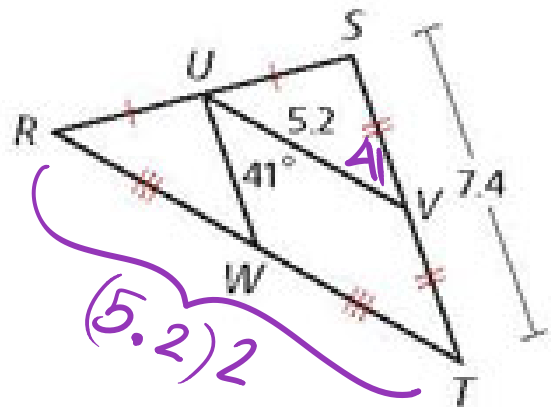
2)  $\overline{UV}$  is a midsegment of  $\triangle RST$

3)  $m\angle SVU = \underline{41^\circ}$  (alt. int  $\angle$ s)

4)  $\overline{UW} = \underline{\frac{1}{2}(7.4) = 3.7}$

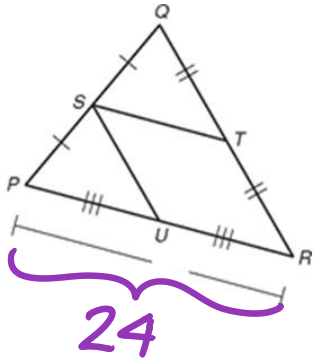
5)  $\overline{RT} = \underline{(5.2)2 = 10.4}$

6)  $\overline{SV} = \underline{\frac{7.4}{2} = 3.7}$

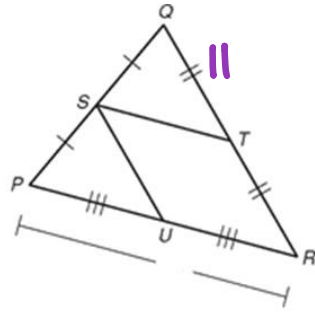


**PRACTICE!**

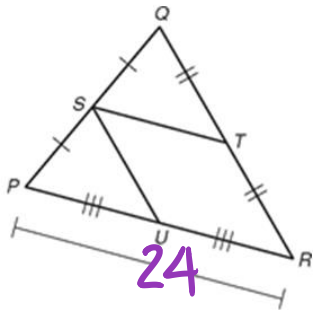
1. Find ST = 12



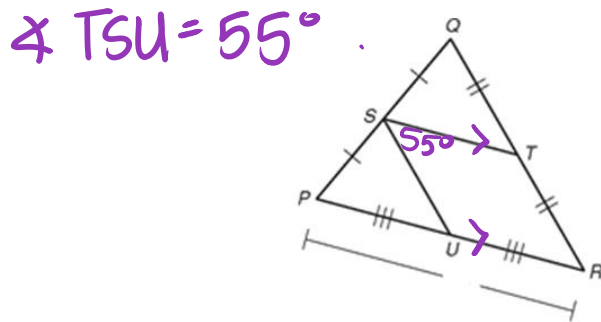
2. Find QR = 22



3. Find PU = 12



4. Find  $\angle SUP = 55^\circ$



6. AC =  $3x + 7$

HJ =  $7x + 6$

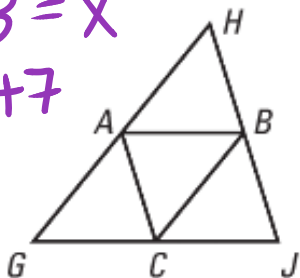
Find AC = 31

$2(3x + 7) = 7x + 6$

$6x + 14 = 7x + 6$

$8 = x$

$AC = 24 + 7 = 31$



7. AB =  $3x + 8$

GJ =  $2x + 24$

Find AB = 14

$3x + 8 = \frac{1}{2}(2x + 24)$

$3x + 8 = x + 12$

$2x = 4$

$x = 2$

$AB = 3(2) + 8 = 14$

