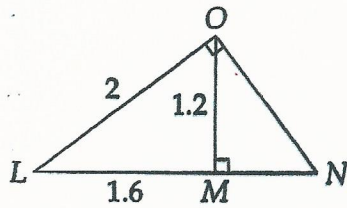


1. Find the length of ON and MN . [Answer: $MN = 0.9$ and 1.5]



Angles OLN and ONL are complementary

$$\angle L + \angle N = 90^\circ, \angle N = 90^\circ - \angle L$$

$$\text{Then } \angle MON = 90^\circ - \angle N = 90^\circ - (90^\circ - \angle L) = \angle L$$

$$\angle LMO = \angle OMN = 90^\circ$$

Then $\triangle LOM \sim \triangle ONM$

$$\text{and } \frac{LO}{ON} = \frac{LM}{OM} = \frac{OM}{NM} \rightarrow \frac{2}{ON} = \frac{1.6}{1.2} = \frac{1.2}{NM}$$

$$1.6(ON) = 2(1.2)$$

$$1.6(ON) = 2.4$$

$$ON = \frac{2.4}{1.6}$$

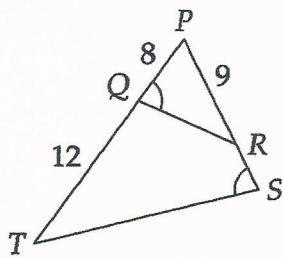
$$ON = \frac{3}{2} = 1.5$$

$$(NM)(1.6) = (1.2)^2$$

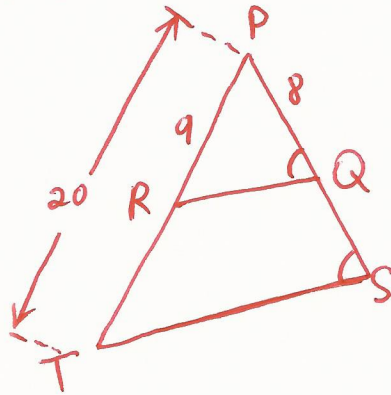
$$NM = \frac{1.44}{1.6}$$

$$NM = \frac{0.72}{0.8} = \frac{0.09}{0.1} = 0.9$$

2. Find the length of RS . [Answer: $79/9$]



Redraw with $\triangle PQR$ changing its position



$\angle P$ is shared

$$\angle PQR = \angle PST$$

Then $\triangle PQR \sim \triangle PST$ by $AA \sim$

$$\frac{PQ}{PS} = \frac{PR}{PT} = \frac{QR}{ST}$$

$$\frac{8}{9+RS} = \frac{9}{20} = \frac{QR}{ST}$$

$$(9+RS)(9) = 160$$

$$81 + 9RS = 160$$

$$9RS = 79$$

$$RS = \frac{79}{9}$$