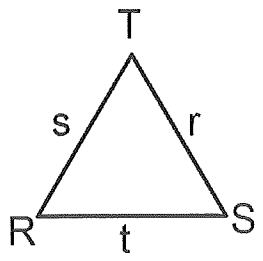
Name: _____ Hour: _____

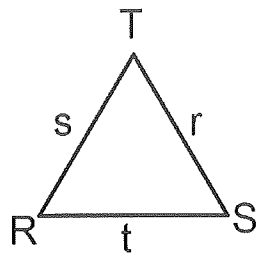
Law of Cosines Homework #1

Directions: Round to the nearest tenth if needed.

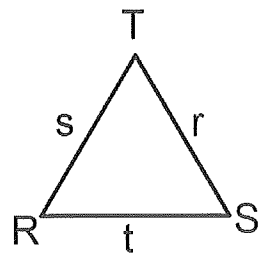
1. $r = 6, t = 11, m\angle S = 87$ Find s.



2. $r = 9, t = 15, m\angle S = 103$ Find s.



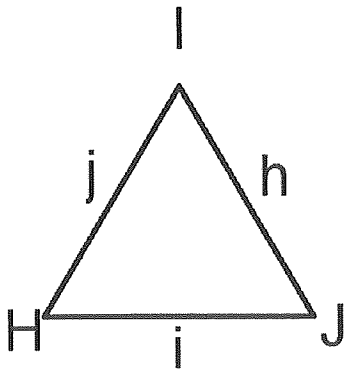
3. $s = 12, t = 10, m\angle R = 58$ Find r.



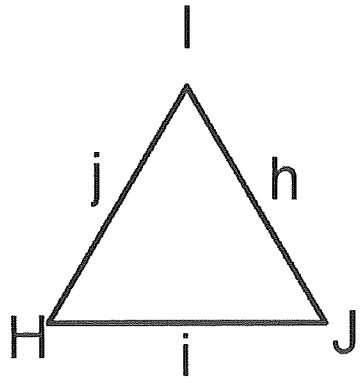
Name: _____ Hour: _____

In ΔHIJ, given the lengths of the sides, find the measure of the stated angle to the nearest tenth.

4. $h = 15, i = 16, j = 22$ Find m<I.



5. h= 30 in, i=51 in, j=55in. Find the m<H.

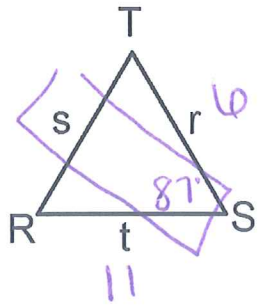


Name: Key Hour: _____

Law of Cosines Homework #1

Directions: Round to the nearest tenth if needed

1. $r = 6, t = 11, m\angle S = 87$

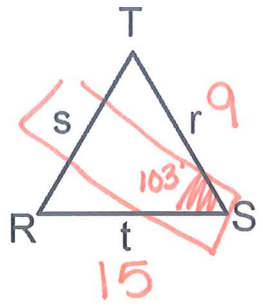


$S^2 = 6^2 + 11^2 - 2 \cdot 6 \cdot 11 \cos(87)$

$S^2 = 150.092$

$S = 12.3$

2. $r = 9, t = 15, m\angle S = 103$

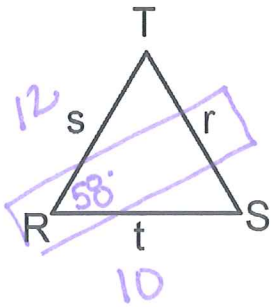


$S^2 = 9^2 + 15^2 - 2 \cdot 9 \cdot 15 \cos(103)$

$S^2 = 366.737$

$S = 19.2$

3. $s = 12, t = 10, m\angle R = 58$



$r^2 = 10^2 + 12^2 - 2 \cdot 10 \cdot 12 \cos(58)$

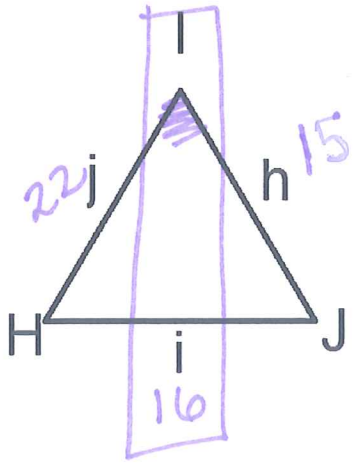
$r^2 = 116.819$

$r \approx 10.8$

Name: _____ Hour: _____

In ΔHIJ, given the lengths of the sides, find the measure of the stated angle to the nearest tenth.

4. $h = 15, i = 16, j = 22; m\angle I$



$16^2 = 15^2 + 22^2 - 2 \cdot 15 \cdot 22 \cos I$

$256 = 709 - 660 \cos I$

$-709 \quad -709$

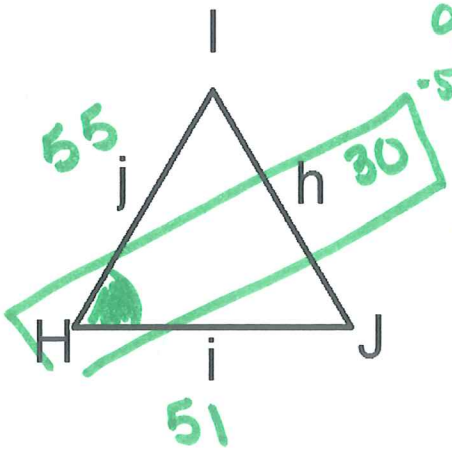
$\frac{-453}{-660} = \frac{-660 \cos I}{-660}$

$\cos I = \frac{-453}{-660}$

$\angle I = \cos^{-1}\left(\frac{-453}{-660}\right)$

$\boxed{\angle I = 46.7^\circ}$

5. h= 30 in, i=51 in, j=55in. Find the m<H.



$30^2 = 51^2 + 55^2 - 2 \cdot 51 \cdot 55 \cos H$

$900 = 5626 - 5610 \cos H$

$-5626 \quad -5626$

$\frac{-4726}{-5610} = \frac{-5610 \cos H}{-5610}$

$\cos H = \frac{-4726}{-5610}$

$\angle H = \cos^{-1}\left(\frac{-4726}{-5610}\right)$

$\angle H = 32.6^\circ$