Key

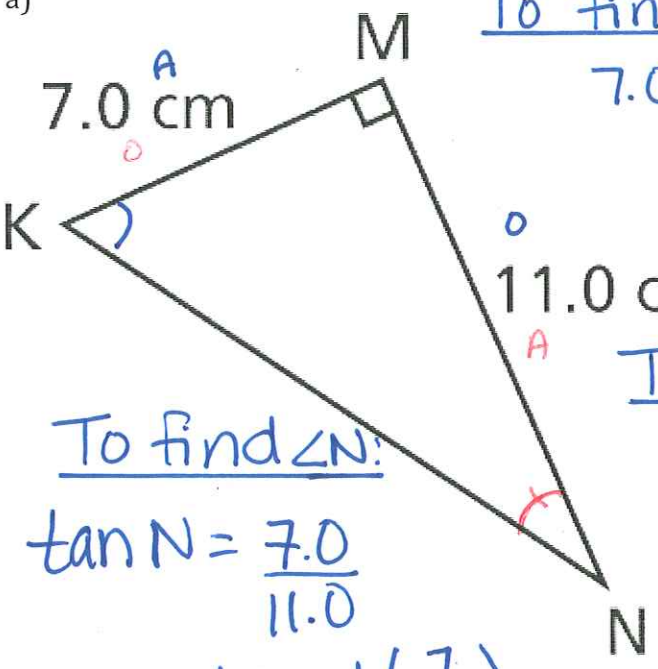
Mathematics 10
Chapter 2: Trigonometry

2.6 Applying the Trigonometric Ratios

To **solve** a triangle means to find the measures of all 3 sides and all 3 angles.

Example : Solve each triangle. Round answers to the nearest tenth of a unit.

a)



To find KN:

$7.0^2 + 11.0^2 = KN^2$

$KN^2 = 170$

$KN = \sqrt{170} \doteq 13.0\text{ cm}$

To find $\angle K$:

$\tan K = \frac{11.0}{7.0}$

$\angle K = \tan^{-1}\left(\frac{11}{7}\right)$

$\angle K = 57.5°$

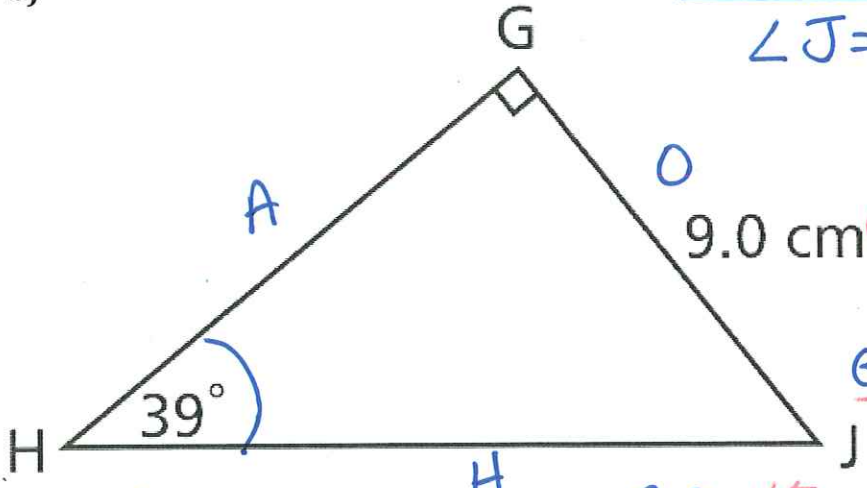
To find $\angle N$:

$\tan N = \frac{7.0}{11.0}$

$\angle N = \tan^{-1}\left(\frac{7}{11}\right)$

$\angle N = 32.5°$

b)



To find $\angle J$:

$\angle J = 180° - 90° - 39° = 51°$

To find GH:

$\tan 39° = \frac{9.0}{GH}$

$GH \tan 39° = 9.0$

$GH = \frac{9.0}{\tan 39°}$

$GH = 11.1\text{ cm}$

To find HJ:

$\sin 39° = \frac{9.0}{HJ}$

$HJ \cdot \sin 39° = 9.0$

$HJ = \frac{9.0}{\sin 39°}$

$HJ = 14.3\text{ cm}$