

Before we begin, are there any questions from last day's work?

pp. 418-419 #1ac, 2ac, 3a, 5a, 6a, 9, 11

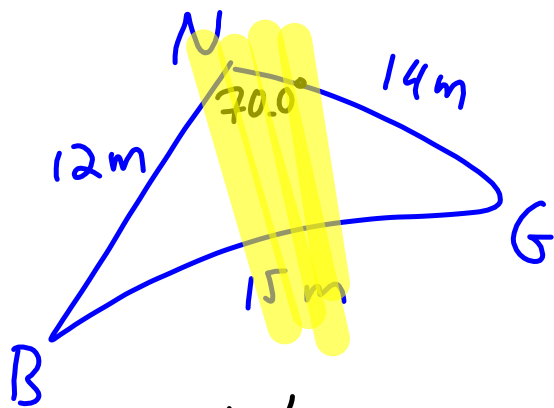
Today's Learning Goal(s):

By the end of the class, I will be able to:

- a) choose the best method to solve any triangle.

Be prepared for tomorrow's quiz on the Sine Law and the Cosine Law.

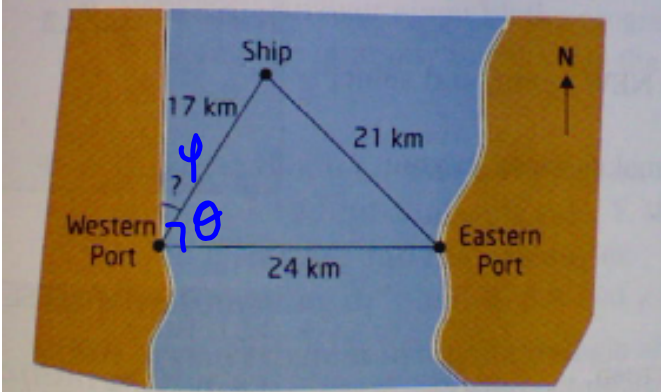
p. 418 #6a $n = 15\text{m}$



$\angle N$	$\angle B$	$\angle G$
$\cos N = \frac{12^2 + 14^2 - 15^2}{2(12)(14)}$ $N = \cos^{-1}\left(\frac{12^2 + 14^2 - 15^2}{2(12)(14)}\right)$ ≈ 69.98 $\approx 70.0^\circ$	$\frac{\sin B}{14} = \frac{\sin 70^\circ}{15}$ $B = \sin^{-1}\left(14 \times \frac{\sin 70^\circ}{15}\right)$ ≈ 61.28 ≈ 61.3	$G = 180^\circ - 61.3^\circ - 70.0^\circ$ $\approx 48.7^\circ$

p. 419 #9

9. A distress signal is received from a ship that is 21 km from one port and 17 km from another port. The eastern port is 24 km directly east of the western port. At what angle to the western shoreline should the ship head, in order to dock at the western port? Round to the nearest degree.



$$\psi = 90^\circ - \theta$$

$$\cos \theta = \frac{17^2 + 24^2 - 21^2}{2(17)(24)}$$

$$\theta = \cos^{-1} \left(\frac{17^2 + 24^2 - 21^2}{2(17)(24)} \right)$$

$$\approx 58.69$$

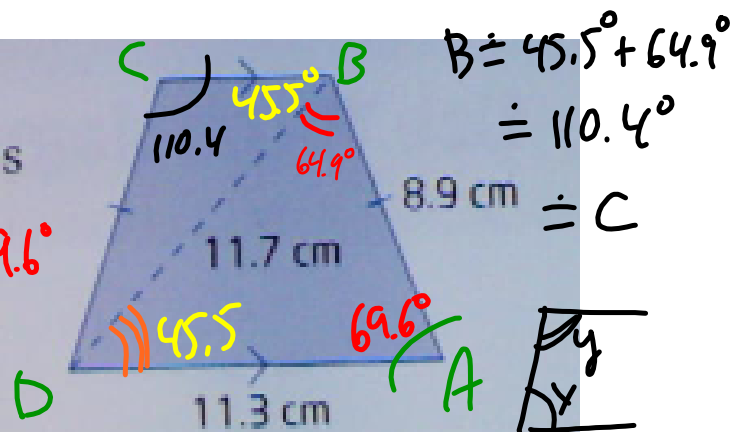
$$\approx 59^\circ$$

$$\therefore \psi = 90^\circ - 59^\circ$$

$$= 31^\circ$$

p. 419 #11

11. Find the interior angles of the isosceles trapezoid, to the nearest tenth of a degree.



$$\cos A = \frac{11.3^2 + 8.9^2 - 11.7^2}{2(11.3)(8.9)}$$

$$A = \cos^{-1}\left(\frac{11.3^2 + 8.9^2 - 11.7^2}{2(11.3)(8.9)}\right)$$

$$\approx 69.63$$

$$\approx 69.6^\circ$$

$$\frac{\sin B}{11.3} = \frac{\sin 69.6^\circ}{11.7}$$

$$B = \sin^{-1}\left(11.3 \times \frac{\sin 69.6^\circ}{11.7}\right)$$

$$\approx 64.85$$

$$\approx 64.9^\circ$$

MPM 2D1

8.4 Solve Problems Using Trigonometry

Date: June 2/16

1. Is it a right triangle?

If yes, use SOH CAH TOA.

2. If not a right triangle,

Are you given an angle AND the side length across?

If yes, use the Sine LAW.

Are you given 2 known angles?

If yes, find the 3rd angle, then use the Sine LAW.

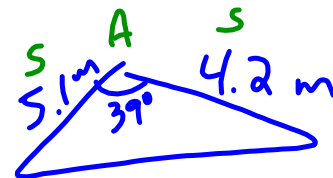
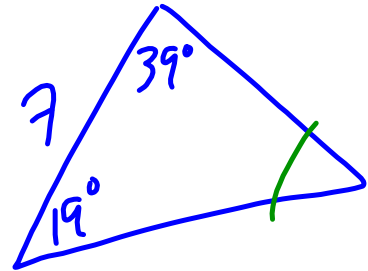
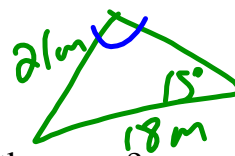
3. If not a right triangle,

Are you given all 3 side lengths?

If yes, use the Cosine LAW.

Are you given 2 sides and the contained angle?

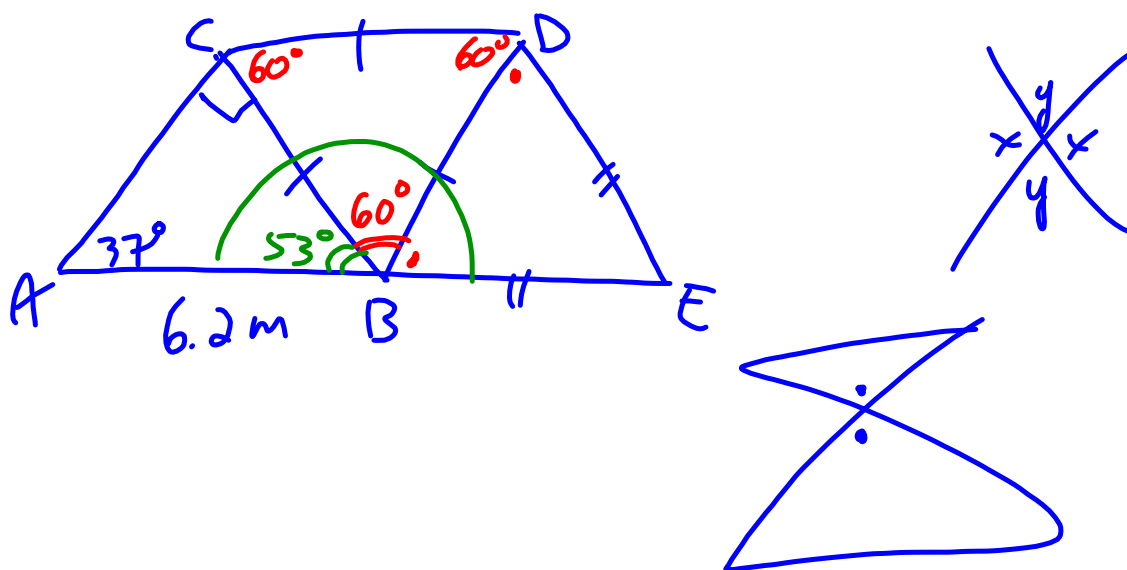
If yes, use the Cosine LAW.



SSS

SAS

Discuss Ex. 1 and 2, beginning on p.424



Review the learning goals. Were we successful today?

By the end of the class, I will be able to:

- a) choose the best method to solve any triangle.

Today's entertainment: p. 428 #6, 7, 8, 10

Enrichment: p. 429 #11, 14, 15, 16

**Be prepared for tomorrow's quiz on
the Sine Law and the Cosine Law.**