

## Today's Learning Goal(s):

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

- Understand when to use SOH CAH TOA versus the sine or cosine laws.
- Solve applications involving trigonometry.

## 1.5 Applications of Trigonometry (Day 2)

Correct p.50 #8, 10 and 11? (use following 2 pages)

Correct "Show What You Know 1.3" (SOH CAH TOA and Sine Law)

### "Show What You Know 1.4" (Sine Law and Cosine Law)

(If time permits, check homework while students write the quiz.)

Complete Day 2 Homework:

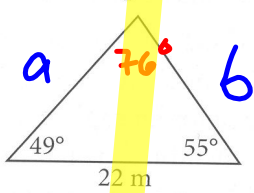
p.49 #6, 7

p.52 #1b, 2, 5, 8

Study for Unit 1 Summative

p.50

8. A triangular garden is to be enclosed by a fence. How much fencing will be required?



$$\frac{a}{\sin 55^\circ} = \frac{22}{\sin 76^\circ}$$

$$\frac{b}{\sin 49^\circ} = \frac{22}{\sin 76^\circ}$$

$$\text{Total Fencing} = 22 + a + b$$

$$= 22 + 18.6 + 17.1$$

$$= 57.7 \text{ m}$$

$$= 58 \text{ m}$$

$$a = \sin 55^\circ \times \frac{22}{\sin 76^\circ}$$

$$= 18.57$$

$$= 18.6 \text{ m}$$

$$b = \sin 49^\circ \times \frac{22}{\sin 76^\circ}$$

$$= 17.11$$

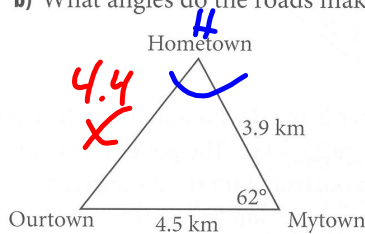
$$= 17.1 \text{ m}$$

$\therefore$  We need 58 m of fencing.

p.50

10. Three roads join Hometown, Mytown, and Ourtown.

- What is the distance from Hometown to Ourtown?
- What angles do the roads make at Hometown and at Ourtown?



$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$x^2 = 4.5^2 + 3.9^2 - 2(4.5)(3.9)\cos 62^\circ$$

$$x = \sqrt{18.98...}$$

$$= 4.35$$

$$= 4.4 \text{ km}$$

$$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$$

$$\frac{\sin H}{4.5} = \frac{\sin 62^\circ}{4.4}$$

$$\sin H = 4.5 \times \frac{\sin 62^\circ}{4.4}$$

$$H = \sin^{-1}\left(4.5 \times \frac{\sin 62^\circ}{4.4}\right)$$

$$= 64.55^\circ$$

$$\cos H = \frac{4.4^2 + 3.9^2 - 4.5^2}{2(4.4)(3.9)}$$

$$H = \cos^{-1}\left(\frac{14.32}{34.32}\right)$$

$$= 65.33^\circ$$