AW Math 11

Day 2: More Bearing Problems class notes

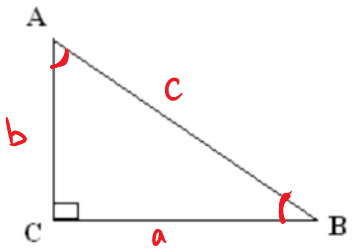
Recall Trigonometric Ratios SohCahToa

For today, we will focus on Tangent ratio:

$\text{Tan } B = \frac{b}{a}$

$\text{Tan } A = \frac{a}{b}$

T = opp/adj



Scientific Calculator Use:

Make sure your calculator is in ***DEGREE*** mode. Try the following and give your answer to 4 decimal places:

Tan 65^0	2.1445
Tan 43^0	0.9325
Tan16^0	0.2867

Suppose we are given the values on the right and we have to find the angles.

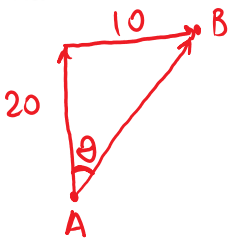
2nd tan

Tan X = 1	Angle X = 45°
Tan Y = 9.5144	Angle Y = 84°
Tan Z = 0.5774	Angle Z = 30°

EXAMPLE 1:

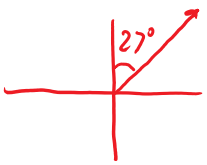
A ship travels from a port in a direction **N** for **20 km**. It then travels **E** for **10 km**. Give the bearing the ship could take to get to the same point directly.

Diagram:



Calculation: $\tan\theta = \frac{10}{20}$ (0.5) 2^{nd} tan (0.5)

$\theta = 26.57°$



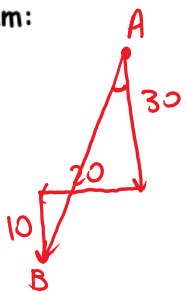
DAD = N027°E

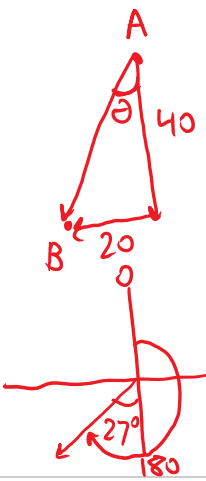
true bearing 027°

EXAMPLE 2:

A ship travels from a port in a direction **S** for **30 km**. It then travels **W** for **20 km**. It then travels **S** for **10 km**. Give the bearing the ship could take to get to the same point directly.

Diagram:





$\tan\theta = \frac{20}{40}$ (0.5)

2^{nd} tan (0.5)

$\theta = 26.57°$

True bearing 180 + 27 = 207°

DAD: S027°W

Assignment pg 8-9

Calculation:

Day 2: More Bearing Problems assignment

1. A ship travels from a port in a direction **N** for **18 km**. It then travels **E** for **25 km**. Give the bearing the ship could take to get to the same point directly.

2. A ship travels from a port in a direction **S** for **45 km**. It then travels **W** for **20 km**. Give the bearing the ship could take to get to the same point directly.

3. A ship travels from a port in a direction **N** for **28 km**. It then travels **W** for **12 km**. Give the bearing the ship could take to get to the same point directly.

4. A ship travels from a port in a direction **S** for **50 km**. It then travels **E** for **30 km**. It then travels **S** for **10 km**. Give the bearing the ship could take to get to the same point directly.

5. A ship travels from a port in a direction **N** for **25 km**. It then travels **W** for **20 km**. It then travels **N** for **10 km**. Give the bearing the ship could take to get to the same point directly.

6. A ship travels from a port in a direction **S** for **50 km**. It then travels **E** for **25 km**. It then travels **N** for **10 km**. Give the bearing the ship could take to get to the same point directly.