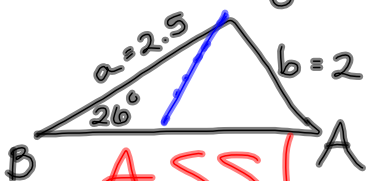
Review

1. Find angle A. $a=2.5$, $b=2$, $B=26^\circ$



ASS!

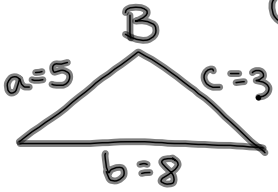
$\frac{\sin A}{a} = \frac{\sin B}{b}$

$\frac{\sin A}{2.5} = \frac{\sin 26^\circ}{2}$

$A = \sin^{-1}\left(\frac{2.5\sin 26^\circ}{2}\right) \approx 33^\circ$

case 2: $\angle A = 180^\circ - 33^\circ = 147^\circ$

2. Find angle B. $a=5$, $b=8$, $c=3$



$b^2 = a^2 + c^2 - 2ac\cos B$

$2ac\cos B = a^2 + c^2 - b^2$

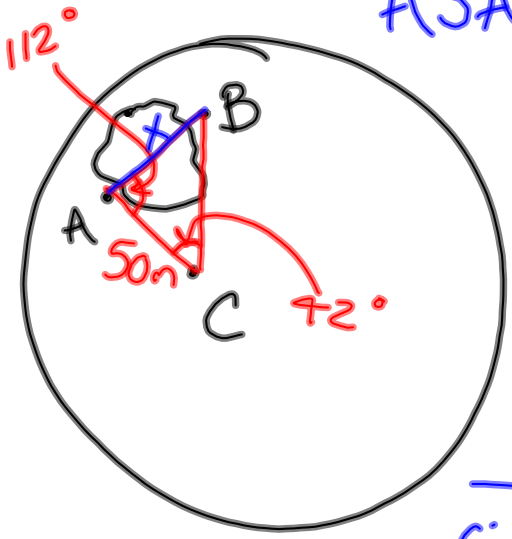
$B = \cos^{-1}\left(\frac{a^2+c^2-b^2}{2ac}\right) = \cos^{-1}\left(\frac{5^2+3^2-8^2}{2(5)(3)}\right) \approx 125^\circ$

3. Find the Area. $a=5$, $b=8$, $C=73^\circ$

$K = \frac{1}{2}ab\sin C = \frac{1}{2}(5)(8)\sin 73^\circ = 19 \text{ mts}^2$

7.1 book

26.



ASA $\triangle \Rightarrow$ law of sines

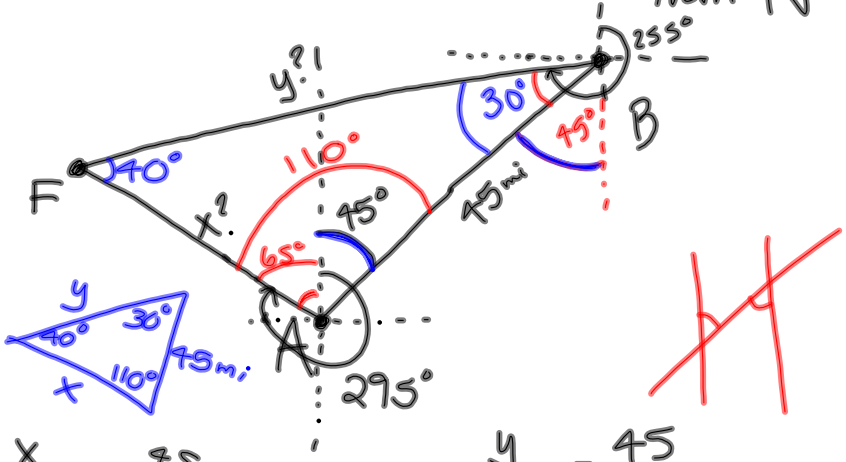
$\angle B = 180^\circ - 112^\circ - 42^\circ = 26^\circ$

$\frac{X}{\sin 42^\circ} = \frac{50m}{\sin 26^\circ}$

$X = \frac{50\sin 42^\circ}{\sin 26^\circ} \approx 76.3m$

29. S23°E ⇒ 23° east of south
"bearing"

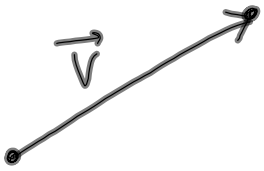
"heading" (pt A is 127° from point B)
is measured clockwise from N



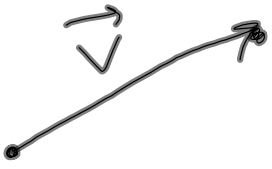
$\frac{x}{\sin 30°} = \frac{45}{\sin 70°}$ $x = \frac{45\sin 30°}{\sin 70°} \approx 35\text{mi}$

$\frac{y}{\sin 110°} = \frac{45}{\sin 40°}$ $y = \frac{45\sin 110°}{\sin 40°} \approx 66\text{ mi}$

7.5 Vectors

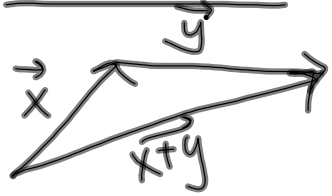


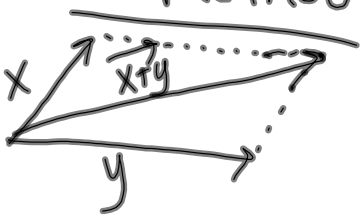
a vector has a unique length (magnitude) & direction angle



Adding Vectors

Triangle Method v. Parallelogram Method

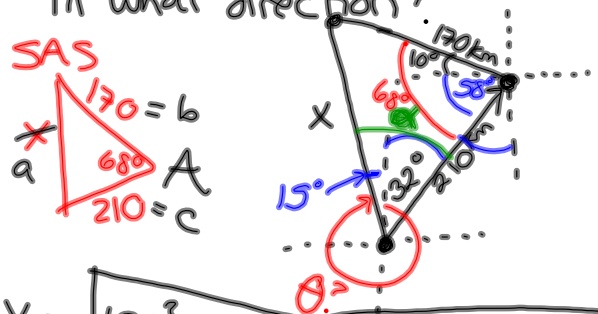


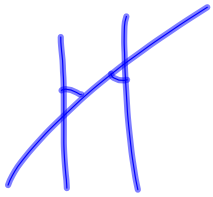


7.5 book

28. flies 32° for 210 km
280° for 170 km

how far is airplane from starting point & in what direction?





$x = \sqrt{170^2 + 210^2 - 2(170)(210)\cos 68^\circ} \approx 215 \text{ km}$

$\frac{\sin \alpha}{170 \text{ km}} = \frac{\sin 68^\circ}{215 \text{ km}}$

$\alpha = \sin^{-1}\left(\frac{170 \sin 68^\circ}{215}\right) \approx 47^\circ$

$\theta = 360^\circ - 15^\circ = 345^\circ$

7.1 handout

#26, 28, 35

7.2 handout

#38, 41, 46, 48

7.5 book

#27, 29 (see example #3 in book)