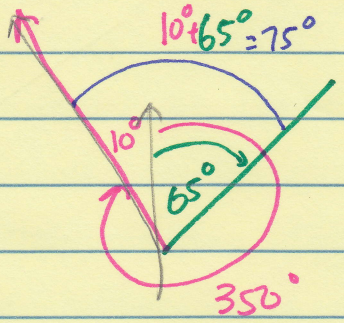
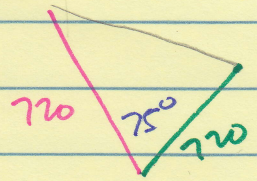
WIS 9.5B

1.



R	T	D
180	4	720
240	3	720

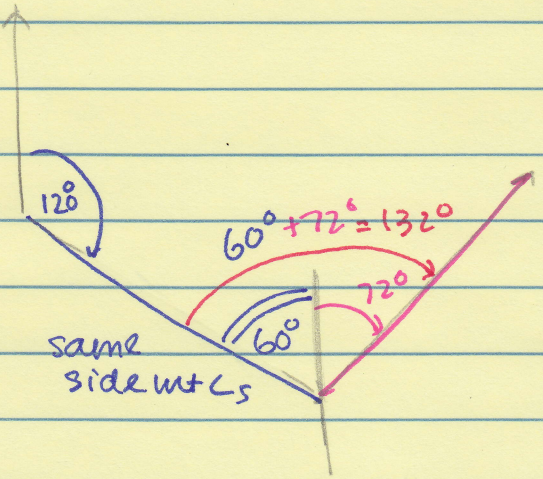


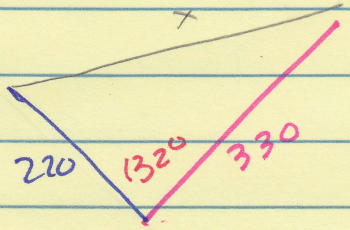
$x^2 = 720^2 + 720^2 - 2(720)(720)\cos 75°$

$x \approx 877$ miles

2.

R	T	D
220	1	220
220	1.5	330





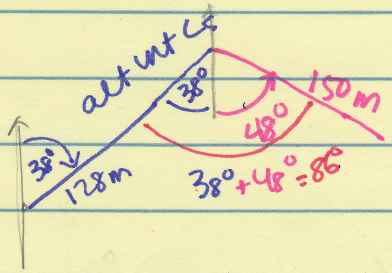
$x^2 = 220^2 + 330^2 - 2(220)(330)\cos 13$

$x \approx 504.4$ mi

blue + pink = actual distance traveled = 220+330 = 550 mi

550 − 504.4 = 45.6 mi

3.

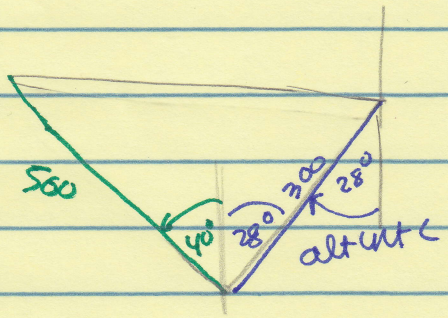


$x^2 = 128^2 + 150^2 - 2(128)(150)\cos 86°$

$x \approx 190$ m

WLs 9.5B #2

4



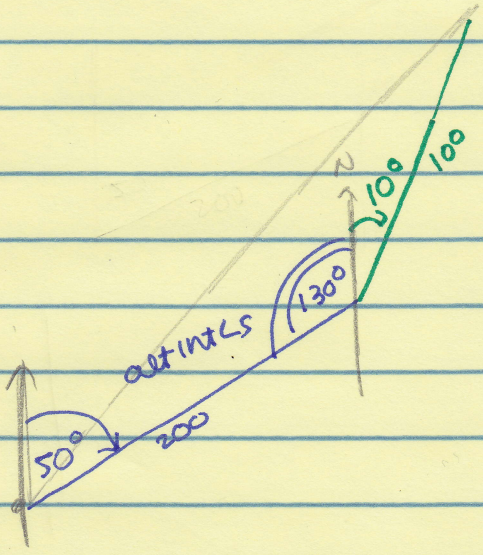
$x^2 = 500^2 + 300^2 - 2(500)(300)\cos 68°$

$x \approx 477$ ft

$\text{Area} = \frac{1}{2}(500)(300)\sin 68°$

$69\,539$ ft^2

5



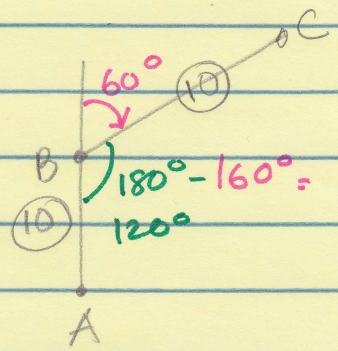
$x^2 = 200^2 + 100^2 - 2(200)(100)\cos 140°$

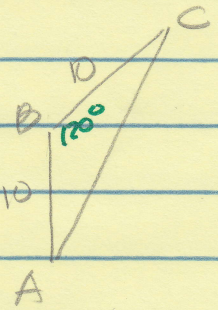
$x \approx 284$ ft

$\text{Area} = \frac{1}{2}(200)(100)\sin 140°$

6428 ft^2

9





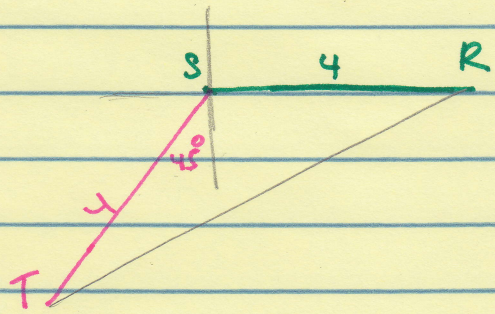
$AC^2 = 10^2+10^2-2(10)(10)\cos 120°$

$= 200-200\left(-\frac{1}{2}\right)$

$= 300$

$AC = 10\sqrt{3} \approx 17.3\text{km}$

10

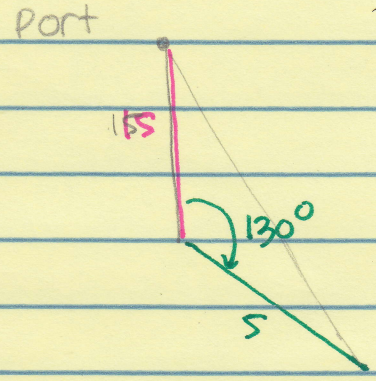


$RT^2 = 4^2+4^2-2(4)(4)\cos 135°$

$RT \approx 7.39\text{km}$

11.

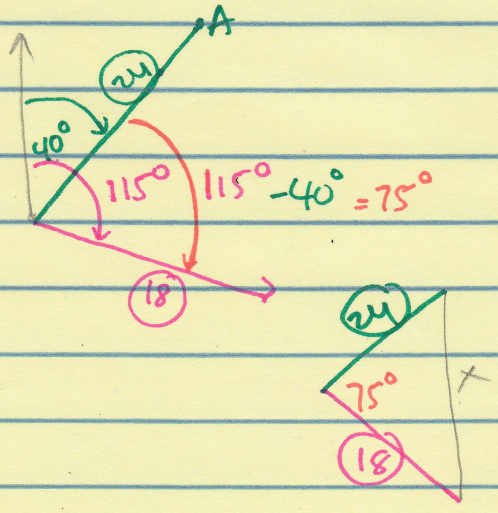
R	T	D
10	1.5	15
10	0.5	5



$x^2 = 15^2+5^2-2(15)(5)\cos 130°$

$x \approx 18.6$ nautical miles

13

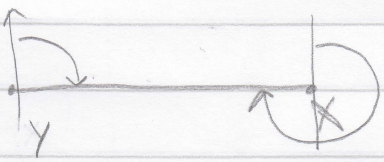


	R	T	D
A	12	2	24
B	9	2	18

$x^2 = 24^2+18^2-2(24)(18)\cos 75°$

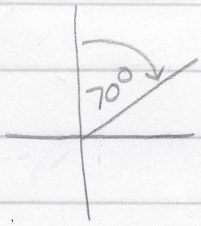
$x \approx 26$ nautical miles

p361 CE

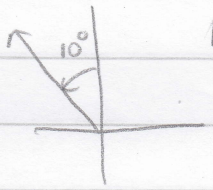
7. 

270° From X to Y

From Y to X 090°

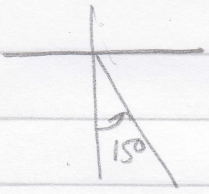
8. 

N 70° E

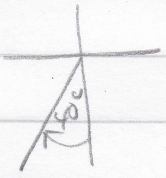
(9) 

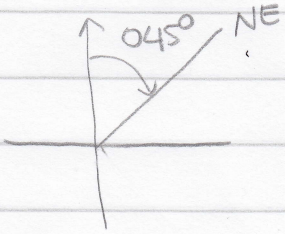
N 10° W

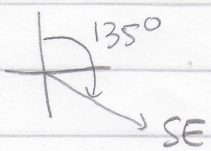
10 S 15° E

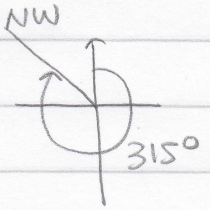


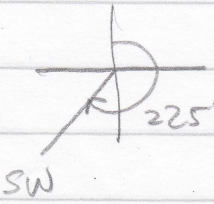
(11) S 40° W



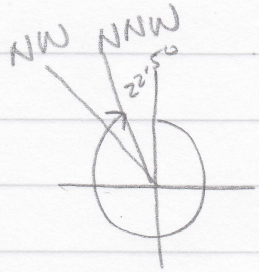
12. 





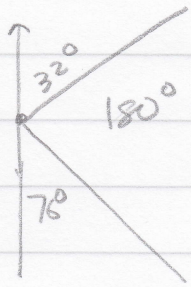


13



$360^\circ - 22.5^\circ = \boxed{337.5^\circ}$

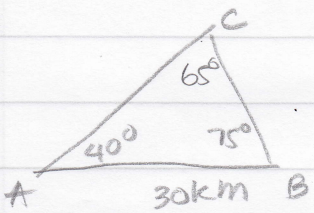
14



$180^\circ - 32^\circ - 76^\circ = \boxed{72^\circ}$

p 365 CT

6

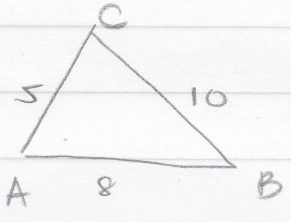


$\angle C = 180^\circ - 40^\circ - 75^\circ = 65^\circ$

$$\frac{30}{\sin 65^\circ} = \frac{AC}{\sin 75^\circ} \rightarrow AC = \frac{30 \sin 75^\circ}{\sin 65^\circ} \approx \boxed{32\text{km}}$$

$$\frac{30}{\sin 65^\circ} = \frac{BC}{\sin 40^\circ} \rightarrow BC = \frac{30 \sin 40^\circ}{\sin 65^\circ} = \boxed{21.3\text{km}}$$

7



$10^2 = 5^2 + 8^2 - 2(5)(8)\cos A$

$100 = 25 + 64 - 80\cos A$

$11 = -80\cos A \rightarrow \cos A = -\frac{11}{80}$

$A = \cos^{-1}\left(-\frac{11}{80}\right) = \boxed{97.9^\circ}$