

# HW 125

A2

1.  $b^2 = 9.2^2 + 5.1^2 - 2(9.2)(5.1) \cos 38$

$b^2 = 36.7$

$b = 6.058$

2.  $6.64^2 = 10.62^2 + 6.14^2 - 2(10.62)(6.14) \cos T$

$0.816 = \cos T$

$T = 35.3^\circ$

3. a)  $6 = 25 + 36 - 2(5)(6) \cos A$

$-45 = -60 \cos A$

$3/4 = \cos A$

$A = \cos^{-1}(3/4)$

$A = 41.41^\circ$

b)  $49 = b^2 + 9 - 6b \cos 60$

$40 = b^2 - 6b \cos 60$

$0 = b^2 - 3b - 40$

$0 = (b-8)(b+5) \rightarrow b = 8, -5$

4. a)  $b^2 = 8.3^2 + 6.8^2 - 2(8.3)(6.8) \cos 49$

$b^2 = 41.07$

$b = 6.41$

$\frac{\sin 49}{6.41} = \frac{\sin C}{6.8}$

$6.41 \sin C = 6.8 \sin 49$

$C = 53.2^\circ$

$b = 6.41$   
 $\angle C = 53.2^\circ$   
 $\angle A = 77.8^\circ$

b)  $\frac{\sin 72}{12.4} = \frac{\sin 36}{f}$

$12.4 \sin 36 = f \sin 72$

$\frac{12.4 \sin 36}{\sin 72} = f$

$\angle F = 36^\circ$

$f = 7.66$

$\angle D = 72^\circ$

4. c)  $4.7^2 = 6.1^2 + 9.1^2 - 2(6.1)(9.1) \cos I$

$0.882 = \cos I$

$28.1^\circ = \angle I$

$\frac{\sin 28.1}{4.7} = \frac{\sin H}{6.1}$

$6.1 \sin 28.1 = 4.7 \sin H$

$\angle H = 37.68$

$\angle I = 28.1^\circ$   
 $\angle H = 37.7^\circ$   
 $\angle G = 114.2^\circ$

6.  $10.62^2 = 6.14^2 + 6.64^2 - 2(6.14)(6.64) \cos S$

$\cos S = -0.38$

$\angle S = 112.3^\circ$