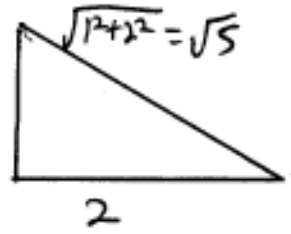
9.1 P. 623 1, 4, 8, 24-28, 42

1) 

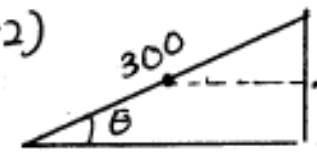
$\sin\theta = \frac{4}{5}$ $\csc = \frac{5}{4}$
$\cos\theta = \frac{3}{5}$ $\sec = \frac{5}{3}$
$\tan\theta = \frac{4}{3}$ $\cot = \frac{3}{4}$

4) 

$\sin\theta = \frac{1}{\sqrt{5}}$ $\csc = \sqrt{5}$
$\cos\theta = \frac{2}{\sqrt{5}}$ $\sec = \frac{\sqrt{5}}{2}$
$\tan = \frac{1}{2}$ $\cot = 2$

8) a) $\sin A = \frac{4}{5}$ b) $\cos B = \frac{4}{5}$ c) $\sin B = \frac{3}{5}$ $\cos A = \frac{3}{5}$

24) $\theta = \cos^{-1}(\frac{1}{6}) \approx 80.4°$
25) $\theta = \tan^{-1}(\frac{4}{5}) \approx 38.66°$
26) $\theta = \sin^{-1}(\frac{25}{6}) \approx 24.62°$
27) $\theta = \cos^{-1}(\frac{4}{7}) \approx 55.12°$
28) $\theta = \tan^{-1}(\frac{4}{3}) \approx 53.13°$

42) 

$\sqrt{300^2 - 260^2} = 100\sqrt{5} \approx 223.6$
a) $\theta = \sin^{-1}(\frac{2}{3}) \approx 41.81°$
b) $100\sqrt{5}/2 = 50\sqrt{5} \approx 111.8$

9.2 1-4, 11-14, 23, 24 (P. 634)

1) $q = \sqrt{5^2+4^2-2\cdot5\cdot4\cos(53°)} \approx 4.11$
2) $b = \sqrt{10^2+7^2-2\cdot10\cdot7\cos(37°)} \approx 6.10$
3) $r = \sqrt{3^2+2^2-2\cdot3\cdot2\cos(131°)} \approx 4.57$
4) $z = \sqrt{5^2+8^2-2\cdot5\cdot8\cos(175°)} \approx 13.00$

11) $m\angle A = \cos^{-1}\left(\frac{3^2-3^2-4^2}{-2\cdot3\cdot4}\right) \approx 29.0°$
12) $m\angle C = \cos^{-1}\left(\frac{9^2-6^2-7^2}{-2\cdot6\cdot7}\right) \approx 87.3°$
13) $m\angle T = \cos^{-1}\left(\frac{12^2-7^2-6^2}{-2\cdot6\cdot7}\right) \approx 134.6°$
14) $m\angle E = \cos^{-1}\left(\frac{21^2-13^2-17^2}{-2\cdot13\cdot17}\right) \approx 87.8°$

23) $m\angle A = \cos^{-1}\left(\frac{9.8^2-10.1^2-5.5^2}{-2\cdot10.1\cdot5.5}\right) \approx 71.0°$
$m\angle B = \cos^{-1}\left(\frac{5.5^2-10.1^2-9.8^2}{-2\cdot10.1\cdot9.8}\right) \approx 32.0°$
$m\angle C = 180° - m\angle B - m\angle A = 77.0°$

24) $m\angle C = 90°$
$m\angle A = 90° - 33° = 58°$
$\sin 33° = b/23$ $b = 23\cdot\sin 33° \approx 12.5$
$\cos 33° = a/23$ $a = 23\cdot\cos 33° \approx 19.3$

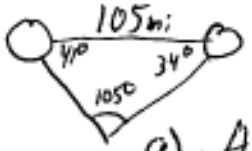
9.3 P. 645 1-4, 23, 24

1) $m\angle A = 180° - (77° + 14°) = 89°$
$\frac{\sin 89°}{6} = \frac{\sin 77°}{B} = \frac{\sin 14°}{C}$
$B = \frac{6\cdot\sin 77°}{\sin 89°} \approx 6.16$ $C = 6\cdot\frac{\sin 14°}{\sin 89°} \approx 1.45$

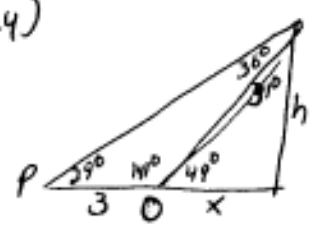
2) $m\angle A = 180° - (19° + 75°) = 86°$
$\frac{\sin 86°}{8} = \frac{\sin 19°}{B} = \frac{\sin 75°}{C}$
$B = 8\frac{\sin 19°}{\sin 86°} \approx 2.61$ $C = 8\cdot\frac{\sin 75°}{\sin 86°} \approx 7.75$

3) $m\angle A = 180° - (98° + 15°) = 67°$
$B = 15\cdot\frac{\sin 98°}{\sin 67°} \approx 16.1$
$C = 15\cdot\frac{\sin 15°}{\sin 67°} \approx 4.22$

4) $m\angle A = 18°$
$B = 4\frac{\sin 48°}{\sin 18°} \approx 9.62$
$C = 4\cdot\frac{\sin 114°}{\sin 18°} \approx 11.83$

23) 

$\frac{\sin 105°}{105} = \frac{\sin 41°}{A} = \frac{\sin 34°}{B}$
a) $A \approx 71.3$mi $B = 60.8$mi
b) $60.8/175$ mi/hr $= .35$ hr

24) 

$h = \tan 29°/(1 - \frac{1}{\tan 41°}) \approx 4.24$ mi
$D = \frac{4.24}{\sin 24°} \approx 8.75$ mi