

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$a^2 = 12^2 + 19^2 - 2(12)(19) \cos 42^\circ$$

$$a^2 = 166.1$$

$$\boxed{a = 12.9}$$

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

$$12^2 = 12.9^2 + 19^2 - 2(12.9)(19) \cos B$$

$$\begin{array}{r} -12.9^2 \\ -12.9^2 \\ -19^2 \\ \hline \end{array}$$

$$-383.41 = -490.2 \cos B$$

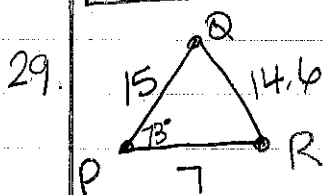
$$\frac{383.41}{490.2} = \cos B$$

$$B = \cos^{-1} \left(\frac{383.41}{490.2} \right)$$

$$\boxed{B = 39^\circ}$$

$$\begin{array}{r} 180 \\ -42 \\ -39 \\ \hline \end{array}$$

$$\boxed{C = 99^\circ}$$



$$p^2 = q^2 + r^2 - 2qr \cos P$$

$$p^2 = 7^2 + 15^2 - 2(7)(15) \cos 73^\circ$$

$$p^2 = 212.6$$

$$\boxed{p = 14.6}$$

$$q^2 = p^2 + r^2 - 2pr \cos Q$$

$$7^2 = 14.6^2 + 15^2 - 2(14.6)(15) \cos Q$$

$$-389.16 = -438 \cos Q$$

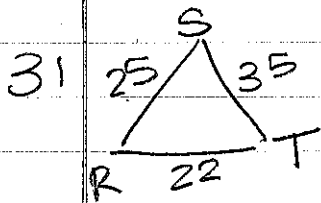
$$\frac{389.16}{438} = \cos Q$$

$$Q = \cos^{-1} \left(\frac{389.16}{438} \right)$$

$$\boxed{Q = 27^\circ}$$

$$\begin{array}{r} 180 \\ -73 \\ -27 \\ \hline \end{array}$$

$$\boxed{R = 80^\circ}$$



$$r^2 = s^2 + t^2 - 2st \cos R$$

$$35^2 = 22^2 + 25^2 - 2(22)(25) \cos R$$

$$116 = -1100 \cos R$$

$$\frac{116}{-1100} = \cos R$$

$$R = \cos^{-1} \left(\frac{116}{-1100} \right)$$

$$R = 96^\circ$$

$$s^2 = r^2 + t^2 - 2rt \cos S$$

$$22^2 = 35^2 + 25^2 - 2(35)(25) \cos S$$

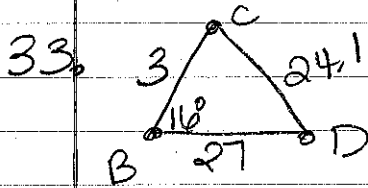
$$-1366 = -1750 \cos S$$

$$\frac{1366}{1750} = \cos S$$

$$S = \cos^{-1} \left(\frac{1366}{1750} \right)$$

$$S = 39^\circ$$

$$\begin{array}{r} 180 \\ - 96 \\ - 39 \\ \hline T = 45^\circ \end{array}$$



$$b^2 = c^2 + d^2 - 2cd \cos B$$

$$b^2 = 27^2 + 3^2 - 2(27)(3) \cos 16^\circ$$

$$b^2 = 582.3$$

$$b = 24.1$$

$$d^2 = b^2 + c^2 - 2bc \cos D$$

$$3^2 = 24.1^2 + 27^2 - 2(24.1)(27) \cos D$$

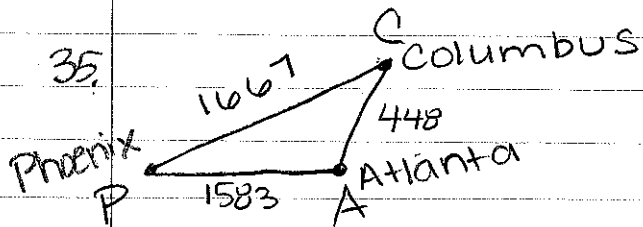
$$-1300.81 = -1301.4 \cos D$$

$$\frac{1300.81}{1301.4} = \cos D$$

$$D = \cos^{-1} \left(\frac{1300.81}{1301.4} \right)$$

$$D = 2^\circ$$

$$\begin{array}{r} 180 \\ - 16 \\ - 2 \\ \hline C = 162^\circ \end{array}$$



$$a^2 = c^2 + p^2 - 2cp \cos A$$

$$1667^2 = 1583^2 + 448^2 - 2(1583)(448) \cos A$$

$$-1583^2 - 1583^2 - 448^2$$

$$-448^2$$

$$72296 = -1418368 \cos A$$

$$-72296 = \cos A$$

$$1418368$$

$$A = \cos^{-1} \left(\frac{-72296}{1418368} \right)$$

$$A = \boxed{93^\circ}$$

$$c^2 = a^2 + p^2 - 2ap \cos C$$

$$1583^2 = 1667^2 + 448^2 - 2(1667)(448) \cos C$$

$$-473704 = -1493632 \cos C$$

$$473704 = \cos C$$

$$1493632$$

$$C = \cos^{-1} \left(\frac{473704}{1493632} \right)$$

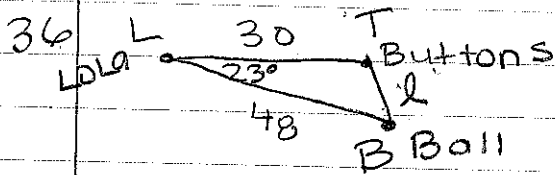
$$C = \boxed{72^\circ}$$

$$180$$

$$-93$$

$$-72$$

$$\boxed{B = 15^\circ}$$



$$l^2 = t^2 + b^2 - 2tb \cos L$$

$$l^2 = 48^2 + 30^2 - 2(48)(30) \cos 23$$

$$l^2 = 552.9$$

$$l = \boxed{23.5 \text{ ft}}$$