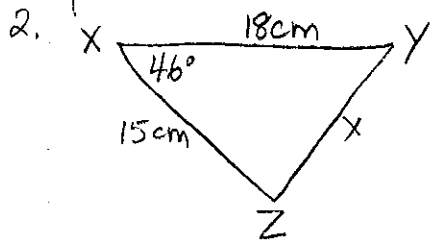


3.3 Foundations of Math II

p. 137 #2, 3, 6, 8-10, 13 draw diagrams

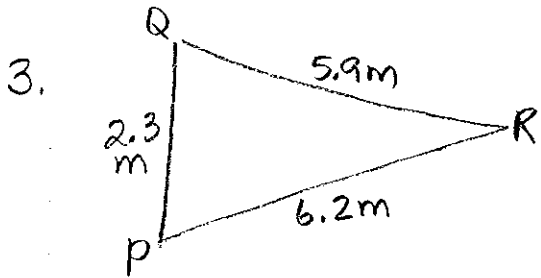


$$x^2 = 15^2 + 18^2 - 2(15)(18)\cos 46^\circ$$

$$x^2 = 225 + 324 - 375.11552$$

$$x^2 = 173.88448$$

$$x = 13.2 \text{ cm}$$



$$5.9^2 = 2.3^2 + 6.2^2 - 2(2.3)(6.2)\cos P$$

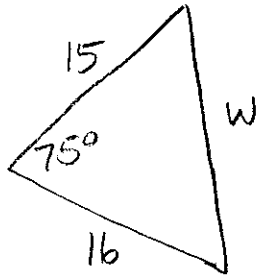
$$34.81 = 5.29 + 38.44 - 28.52\cos P$$

$$-8.92 = -28.52\cos P$$

$$0.31276297 = \cos P$$

$$LP = 72^\circ$$

b. a)



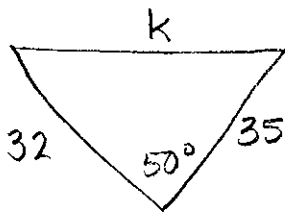
$$W^2 = 15^2 + 16^2 - 2(15)(16)\cos 75^\circ$$

$$W^2 = 225 + 256 - 124.23314$$

$$W^2 = 356.76686$$

$$W = 18.9$$

b)



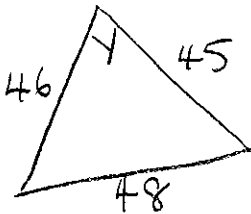
$$k^2 = 32^2 + 35^2 - 2(32)(35)\cos 50^\circ$$

$$k^2 = 1024 + 1225 - 1439.84425$$

$$k^2 = 809.15575$$

$$k = 28.4$$

c)



$$48^2 = 46^2 + 45^2 - 2(46)(45)\cos Y$$

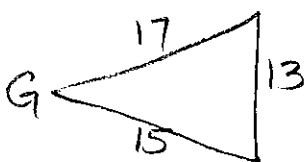
$$2304 = 2116 + 2025 - 4140\cos Y$$

$$-1837 = -4140\cos Y$$

$$0.4437198 = \cos Y$$

$$LY = 64^\circ$$

d)



$$13^2 = 17^2 + 15^2 - 2(17)(15)\cos G$$

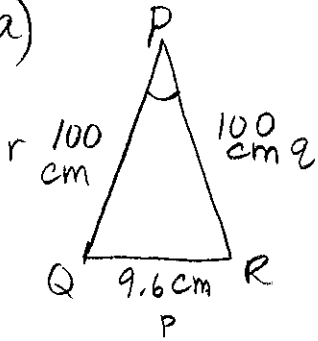
$$169 = 289 + 225 - 510\cos G$$

$$-345 = -510\cos G$$

$$0.67647 = \cos G \rightarrow LG = 47^\circ$$

P. 137 cont.

8. a)



$$9.6^2 = 100^2 + 100^2 - 2(100)(100) \cos P$$

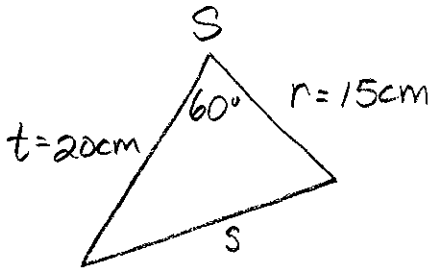
$$92.16 = 10000 + 10000 - 20000 \cos P$$

$$-19907.84 = -20000 \cos P$$

$$0.995392 = \cos P$$

$$\angle P = 5.5^\circ$$

9.



$$s^2 = 20^2 + 15^2 - 2(20)(15) \cos 60^\circ$$

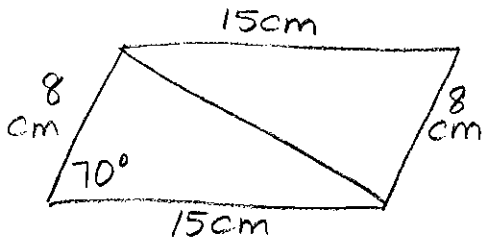
$$s^2 = 400 + 225 - 300$$

$$s^2 = 325$$

$$s = 18.0 \text{ cm}$$

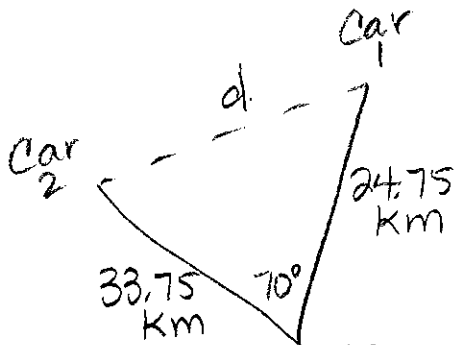
$$\text{perimeter} = 20 + 15 + 18 = 53 \text{ cm}$$

10.



Use the cosine law with 70° and sides 8 cm and 15 cm

13.



Driver 1 travels 33 km/h for 45 min
 $33 (0.75) = 24.75 \text{ km}$

Driver 2 travels 45 km/h for 45 min
 $45 (0.75) = 33.75 \text{ km}$

$$d^2 = 33.75^2 + 24.75^2 - 2(33.75)(24.75) \cos 70^\circ$$

$$d^2 = 1139.0625 + 612.5625 - 571.3874$$

$$d^2 = 1180.2376$$

$$d = 34.4 \text{ km}$$