

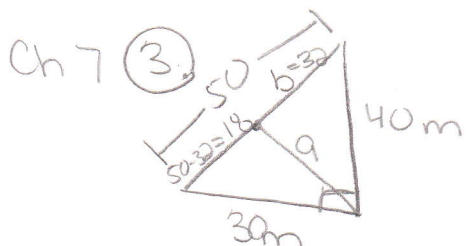
Ch 8 SG Solutions

8.1 (1) $20^2 + 99^2 \neq 101^2$
 $10201 \neq 10201$

D

8.1 (2) $28^2 + 24^2 \neq 38^2$
 $1360 < 1444$

A



PythagThm
 $40^2 + 30^2 = c^2$
 $2500 = c^2$
 $50 = c$

A

$\frac{50}{40} = \frac{40}{b}$ $\frac{18}{a} = \frac{a}{32}$
 $50b = 1600$ $a^2 = 576$
 $b = 32$ $a = 24$

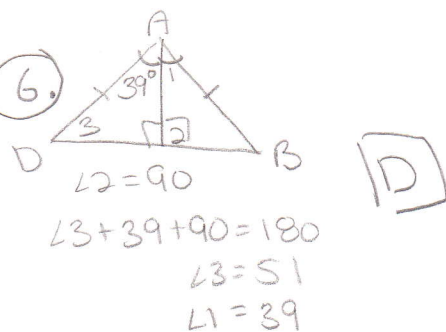
Ch 7 (4) $\frac{7.1}{x} = \frac{6.4}{16.3}$

C $6.4x = 115.73$
 $x = 18.1$

(5) $(n-2)180$
 $= (28-2)180$
 $= 4680$

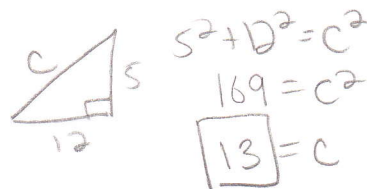
C

Ch 6 (6)



D

8.1 (7)



$5^2 + 12^2 = c^2$
 $169 = c^2$
 $13 = c$

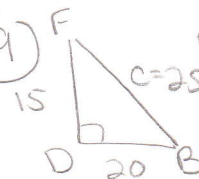
8.1 (8)



$a^2 + 7^2 = 20^2$
 $a^2 = 351$
 $a = \sqrt{351}$
 $a \hat{=} 39$

A = 3\sqrt{39}

8.1 (9)

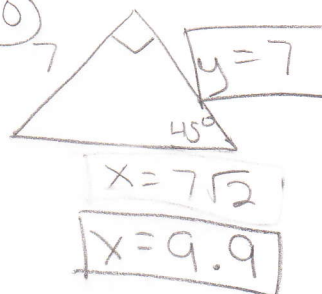


$15^2 + 20^2 = c^2$
 $625 = c^2$
 $25 = c$

$F \rightarrow D \rightarrow B$ $F \rightarrow B$
 $= 15 + 20$ $= 25 \text{ mi}$
 $= 35 \text{ mi}$

10 miles shorter

8.2 (10)



$x = 7\sqrt{2}$

$x = 9.9$

$$8.3 \text{ (19)} \quad \tan 30 = \frac{10}{x}$$

$$x = \frac{10}{\tan 30} \\ = \boxed{17.3}$$

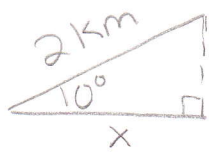
$$8.3 \text{ (20)} \quad \cos 36 = \frac{x}{9}$$

$$x = 9(\cos 36) \\ = \boxed{7.3}$$

$$8.3 \text{ (21)} \quad \sin 26 = \frac{18}{x}$$

$$x = \frac{18}{\sin 26} \\ = \boxed{41.1}$$

8.3 (22)



A right-angled triangle with a hypotenuse of 2 km and an angle of 10 degrees. The side adjacent to the angle is labeled x.

$$\cos 10 = \frac{x}{2} \\ x = 2(\cos 10) \\ = 1.96 \\ = \boxed{2 \text{ km}}$$

8.3 (23)

$$\tan \angle A = \frac{100}{249}$$

$$\angle A = \tan^{-1} \frac{100}{249} \\ = \boxed{22^\circ}$$

$$8.3 \text{ (24)} \quad \cos x = \frac{14}{23}$$

$$x = \cos^{-1} \frac{14}{23} \\ = \boxed{53^\circ}$$

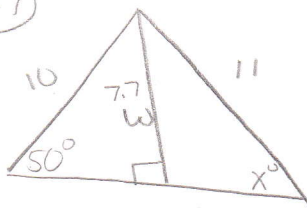
$$8.3 \text{ (25)} \quad \sin x = \frac{14}{15}$$

$$x = \sin^{-1} \frac{14}{15} \\ = \boxed{69^\circ}$$

$$8.3 \text{ (26)} \quad \tan x = \frac{9}{5}$$

$$x = \tan^{-1} \frac{9}{5} \\ = \boxed{61^\circ}$$

8.3 (27)

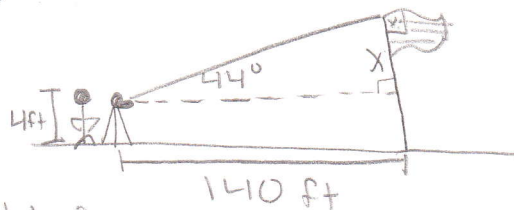


$$\sin 50 = \frac{7.7}{10} \quad \sin x = \frac{7.7}{11} \\ w = 10(\sin 50) \quad x = \sin^{-1} \frac{7.7}{11}$$

$$\boxed{w = 7.7}$$

$$\boxed{x = 41.4^\circ}$$

8.4 (28)



height of pole = $x + 4$

$$\text{Find } x: \tan 44 = \frac{x}{140}$$

$$x = 140(\tan 44)$$

$$\text{height} = 140(\tan 44) + 4$$

$$= \boxed{139 \text{ ft}}$$

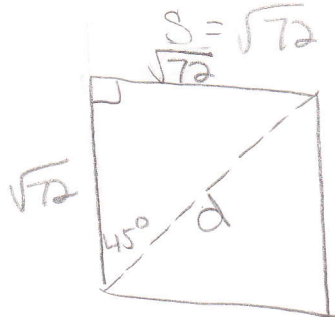
8.2 (11)

$$\frac{x\sqrt{2}}{\sqrt{2}} = \frac{13}{\sqrt{2}}$$

$$x = \frac{13 \cdot \sqrt{2}}{\sqrt{2}}$$

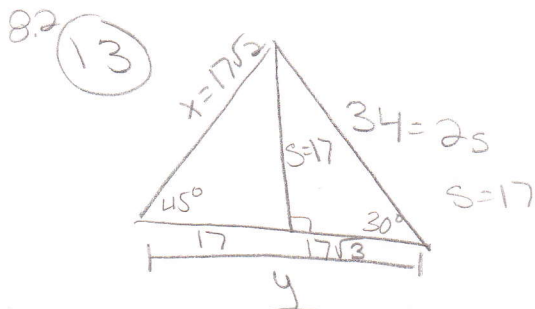
$$x = \frac{13\sqrt{2}}{2}$$

8.2 (12) $A = s^2 = 72$



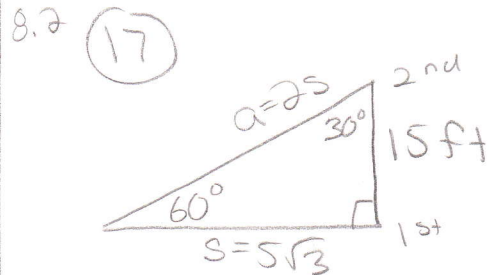
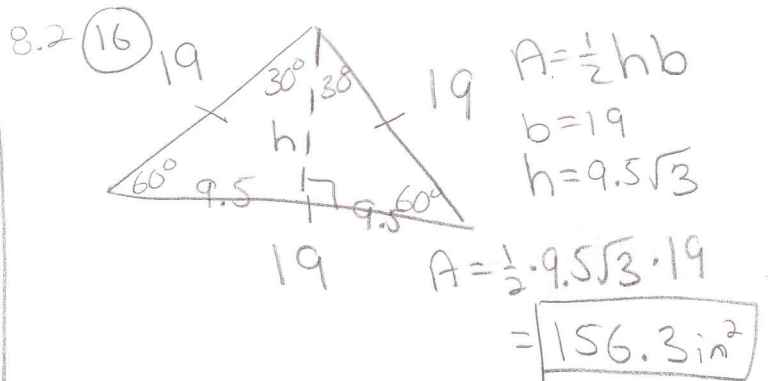
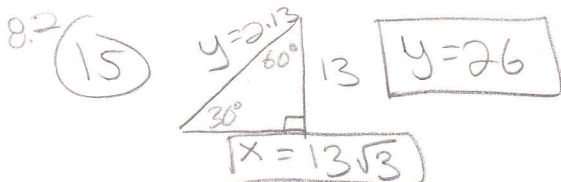
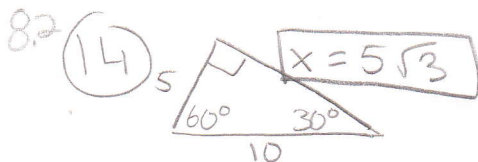
$$d = \sqrt{2} \cdot \sqrt{2}$$

$$= \sqrt{144} = 12 \text{ m}$$



$$x = 17\sqrt{2} = 24.0$$

$$y = 17 + 17\sqrt{3} = 46.4$$



$$15 = s\sqrt{3}$$

$$s = \frac{15 \cdot \sqrt{3}}{\sqrt{3}} = \frac{15\sqrt{3}}{3} = 5\sqrt{3}$$

$$a = 2s = 2 \cdot 5\sqrt{3}$$

$$= 17 \text{ feet}$$

$$\frac{75 \text{ ft}}{1 \text{ min}} = \frac{17 \text{ ft}}{x \text{ min}}$$

$$75x = 17$$

$$x = 0.2 \text{ min}$$

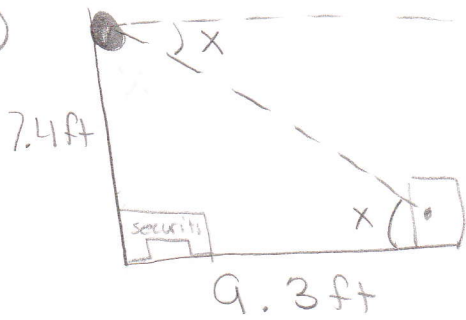
8.3 (18)

$$\sin \angle P = \frac{20}{29} \quad \sin \angle Q = \frac{21}{29}$$

$$\cos \angle P = \frac{21}{29} \quad \cos \angle Q = \frac{20}{29}$$

$$\tan \angle P = \frac{20}{21} \quad \tan \angle Q = \frac{21}{20}$$

8.4 (29)



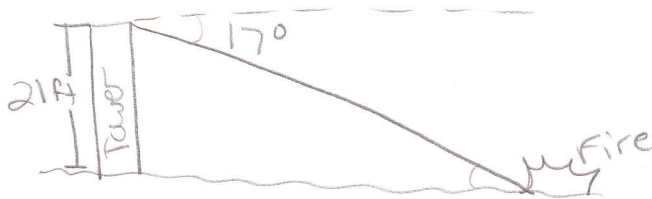
$$\tan x^\circ = \frac{7.4}{9.3}$$

$$x^\circ = \tan^{-1} \frac{7.4}{9.3}$$

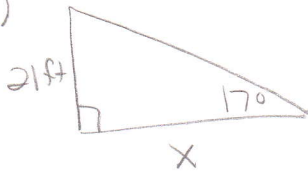
$$= \boxed{39^\circ}$$

8.4 (30)

a)



b)



$$\tan 17 = \frac{21}{x}$$

$$x = \frac{21}{\tan 17}$$

$$= \boxed{69 \text{ ft}}$$