

HA2

Ch 5-7 Review answers

①

$$144 \cdot \frac{\pi}{180} = \frac{4\pi}{5}$$

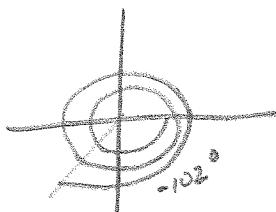
②

$$\frac{67\pi}{18} \cdot \frac{180}{\pi} = 670^\circ$$

③

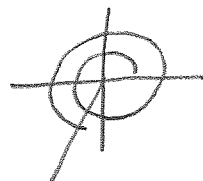
$$2 \cdot \frac{180}{\pi} = 114.59^\circ$$

④



$$\begin{array}{r} 360 \\ -102 \\ \hline 258^\circ \end{array}$$

⑤



$$\pi + \frac{3\pi}{5} = \frac{8\pi}{5}$$

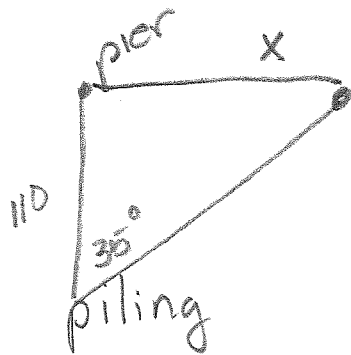
⑥

$S = r\theta$ remember θ must be in radians

$$14.56 \left(240 \cdot \frac{\pi}{180} \right) = 60.99 \text{ in.}$$

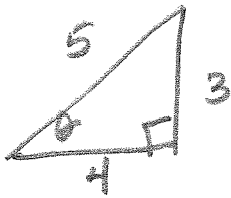
$$\begin{aligned}
 \textcircled{7} \quad & \frac{1}{14 \text{ in}} \cdot \frac{36 \text{ mi}}{1 \text{ hr}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} \cdot \frac{12 \text{ in}}{1 \text{ ft}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ rev}}{2\pi} \\
 & = 432.17 \frac{\text{rev}}{\text{min}}
 \end{aligned}$$

$\textcircled{8}$



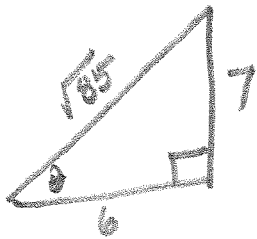
$$\tan 35^\circ = \frac{x}{110} \approx 77 \text{ ft}$$

$\textcircled{9}$



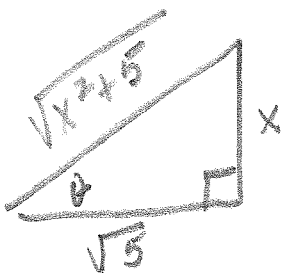
$$\cos \theta = \frac{4}{5}$$

$\textcircled{10}$



$$\cos \theta = \frac{6}{\sqrt{85}} = \frac{6\sqrt{85}}{85}$$

$\textcircled{11}$



$$\sin \theta = \frac{x}{\sqrt{x^2 + 5}} = \frac{x\sqrt{x^2 + 5}}{x^2 + 5}$$

(12)

$$A = 5$$

$$p = \pi$$

no p.s

$$\pi = \frac{2\pi}{k}$$

$$k = 2$$

$$y = 5 \cos 2x$$

(13)

$$A = 4$$

$$p = \frac{2\pi}{8} = \frac{\pi}{4}$$

$$p.s = -\frac{\pi}{8}$$

(14)

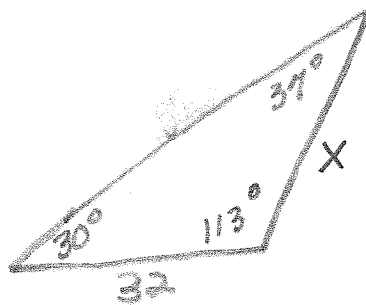
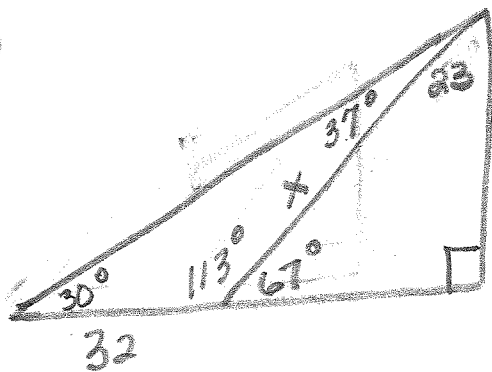
$$y = -10 \cos \frac{1}{2} t$$

$$p = 4\pi$$

$$4\pi = \frac{2\pi}{k}$$

$$k = \frac{1}{2}$$

(15)

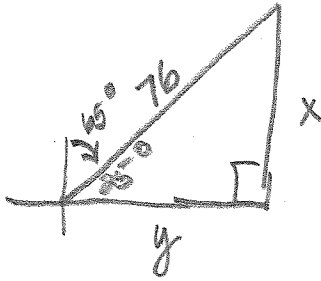


$$\frac{X}{\sin 30} = \frac{32}{\sin 37}$$

$$X = \frac{32 \sin 30}{\sin 37} \approx 26.16 \approx 27 \text{ ft}$$

(3)

16



$$\sin 25^\circ = \frac{x}{76}$$

$$x \approx 32.1 \text{ N}$$

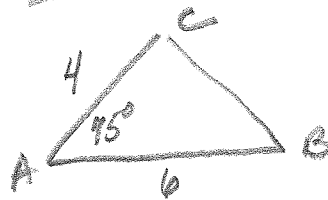
$$\cos 25^\circ = \frac{y}{76}$$

$$y \approx 68.9 \text{ E}$$

17 Law of sines obtuse \angle Case 2

$$2 < 23$$

no solution.



18 Law of Cosines SAS.

$$a^2 = 4^2 + 6^2 - 2(4)(6)\cos 75^\circ$$

$a = 6.29 \approx 6.3$

$$\frac{4}{\sin B} = \frac{6.3}{\sin 75^\circ}$$

$$\sin B = \frac{4 \sin 75^\circ}{6.3}$$

$B \approx 37.9^\circ \approx 38^\circ$
 $C \approx 67^\circ$

① Law of Sines SSA

$$3 > 2.61$$

$$3 < 4 \quad 2 \text{ sol}^n$$

$$\frac{4}{\sin 2A} = \frac{3}{\sin 41}$$

$$\angle A \approx 61^\circ$$

$$\angle C \approx 78^\circ$$

$$180 - 41 - 61 = \angle C$$

$$\frac{3}{\sin 41^\circ} = \frac{c}{\sin 78^\circ}$$

$$c \approx 4.5$$

$$\angle A' = 119^\circ$$

$$\angle C' = 20^\circ$$

$$\frac{3}{\sin 41^\circ} = \frac{c'}{\sin 20^\circ}$$

$$c' \approx 1.6$$

② Law of Cosines SSS

$$\cos \angle A = \frac{6^2 + 4^2 - 9^2}{2(6)(4)}$$

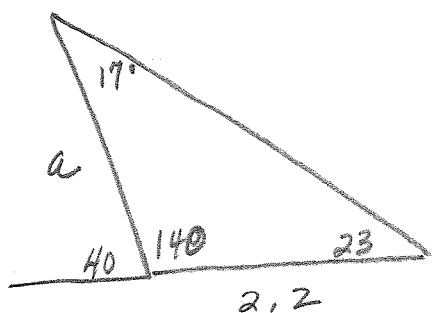
$$\angle A \approx 127.2 \approx 127^\circ$$

$$\frac{4}{\sin \angle C} = \frac{9}{\sin 127}$$

$$\angle C \approx 21^\circ$$

$$\angle B \approx 32^\circ$$

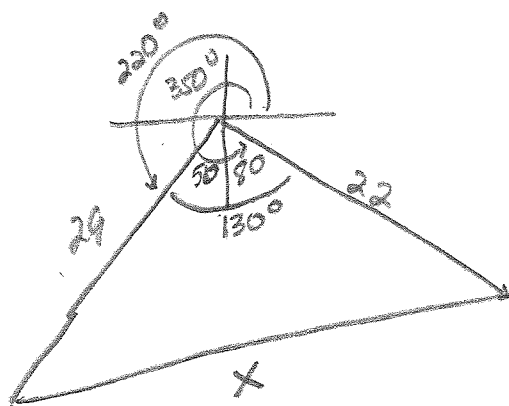
(21)



$$\frac{2.2}{\sin 17^\circ} = \frac{a}{\sin 23^\circ}$$

$$a \approx 2.9$$

(22)



SAS

$$x^2 = 29^2 + 22^2 - 2(29)(22)\cos 130^\circ$$

$$x \approx 46.3$$

$$\times 5 \text{ hrs}$$

$$231.6 \text{ mi}$$

(23)

$$K = \sqrt{s(s-a)(s-b)(s-c)}$$

$$\sqrt{21(21-13)(21-19)(21-10)}$$

$$K = 60.8 \text{ m}^2 \approx 61 \text{ m}^2$$

$$s = \frac{1}{2}(13+19+10)$$

$$= 21$$

(24)

$$K = \frac{1}{2}ab \sin C$$

$$K = \frac{1}{2}(2)(8)\sin 105^\circ$$

$$K \approx 7.7 \approx 8 \text{ yd}^2$$