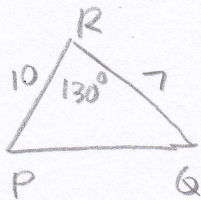


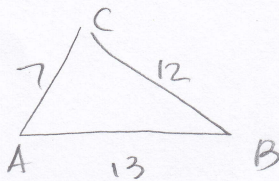
P355

2.



$$\text{Area} = \frac{1}{2} (10)(7) (\sin 130^\circ)$$

4.



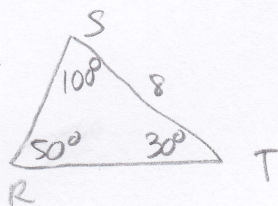
$$7^2 = 12^2 + 13^2 - 2(12)(13) \cos B$$

$$49 = 144 + 169 - 312 \cos B$$

$$\cos B = \frac{-264}{-312} \approx 0.84615384615$$

$$\approx 32.2^\circ$$

6.



$$\angle S = 100^\circ$$

$$\angle T = 30^\circ$$

$$\angle R = 180^\circ - 100^\circ - 30^\circ = 50^\circ$$

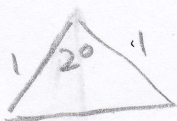
$$\frac{8}{\sin 50^\circ} = \frac{t}{\sin 30^\circ} \rightarrow t \sin 50^\circ = 8 \sin 30^\circ$$

$$t = \frac{8 \sin 30^\circ}{\sin 50^\circ} \approx 5.221$$

$$\frac{s}{\sin 100^\circ} = \frac{8}{\sin 50^\circ} \rightarrow s \sin 50^\circ = 8 \sin 100^\circ$$

$$s = \frac{8 \sin 100^\circ}{\sin 50^\circ} \approx 10.285$$

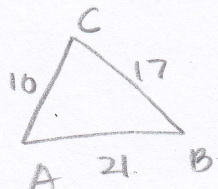
8. 180 sides: Central  $\angle = \frac{360^\circ}{180} = 2^\circ$



$$\text{Area of } 180 \Delta = 180 \cdot \frac{1}{2} (1)(1) \sin 2^\circ$$

$$= 3.141$$

10.



$$17^2 = 10^2 + 21^2 - 2(10)(21) \cos A$$

$$289 = 100 + 441 - 420 \cos A$$

$$\cos A = \frac{252}{420} = 0.6 \rightarrow A \approx 53.130^\circ$$

$$\sin A = 0.8$$

12.



$$8 \sin 16^\circ = \frac{300}{x} \rightarrow x \sin 16^\circ = 300$$

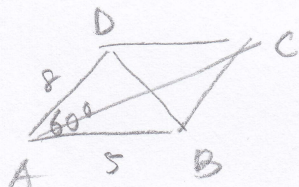
$$x = \frac{300}{\sin 16^\circ} = \frac{1088.38658356 \text{ ft}}{4 \text{ min}} \rightarrow \text{took } 4 \text{ min}$$

$$\rightarrow \text{speed} = \frac{272.096645891 \text{ ft}}{1 \text{ min}}$$

$$\text{in } 1 \text{ hr} = \frac{272.096645891 \text{ ft}}{1 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} = 16325.8 \text{ ft/hr}$$

$$\frac{16325.8 \text{ ft}}{\text{hr}} \cdot \frac{1 \text{ hr}}{6080 \text{ ft}} = \frac{\text{nautical mi}}{\text{hr}} = 2.685 \frac{\text{nautical mi}}{\text{hr}}$$

14.



$$\text{Area } \triangle ABD = \frac{1}{2}(8)(5) \sin 60^\circ =$$

$$20 \cdot \frac{\sqrt{3}}{2} = 10\sqrt{3}$$

$$\text{Area of } \square ABCD = 2(10\sqrt{3}) = 20\sqrt{3}$$

$$BD^2 = 5^2 + 8^2 - 2(5)(8) \cos 60^\circ$$

$$= 25 + 64 - 80 \cdot \frac{1}{2} = 49 \rightarrow BD = 7$$

$$\angle B = 120^\circ$$

$$AC^2 = 5^2 + 8^2 - 2(5)(8) \cos 120^\circ$$

$$= 25 + 64 - 80 \left(-\frac{1}{2}\right)$$

$$= 89 + 40 = 129$$

$$AC = \sqrt{129} \approx 11.36$$