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Quizz VI
Math1060-02

Problem 1. (4 points) Use the information $C = 145^\circ$, $b = 4$, $c = 14$ to solve the triangle. First of all we have that

$$\sin B = b \frac{\sin C}{c} = \frac{4 \sin 145^\circ}{14} = 0.1638$$

So we have that $B = 9.427^\circ$. Now $A = 180^\circ - B - C = 25.572^\circ$. Finally for a we use

$$a = c \frac{\sin A}{\sin C} = 10.5357$$

Problem 2. (4 points) Use the information $A = 58^\circ$, $a = 11.4$, $b = 12.8$ to solve the triangle. We have that $h = b \sin A = 12.8 \sin 58^\circ = 10.855$. Since we have $h < a < b$ we have two solutions. In any case

$$\sin B = b \frac{\sin A}{a} = \frac{12.8 \sin 58^\circ}{11.4} = 0.952$$

There are two such angles $0^\circ < B < 180^\circ$ (corresponding to the solutions).

Case I $B = 72.211^\circ$. Then $C = 49.788^\circ$ and

$$c = a \frac{\sin C}{\sin A} = 10.265.$$

Case II $B = 107.788^\circ$. Then $C = 14.211^\circ$ and

$$c = a \frac{\sin C}{\sin A} = 3.300.$$

Problem 3. (4 points) Find the area of the triangle having $B = 72^\circ 30'$, $a = 105$, $c = 64$. Keep in mind that $30' = 0.5^\circ$

We have that

$$A = \frac{1}{2} ac \sin b = 3204.488$$