Algebra II\ Trig Ch. 14: 14.1-14.2 Quiz

Find the Area of ΔABC to the nearest tenth of a square unit.

1. a = 4 m, c = 9 m, B = 67°

$K = \frac{1}{2} \cdot 4 \cdot 9 \sin 67°$

$K = 16.6 m^2$

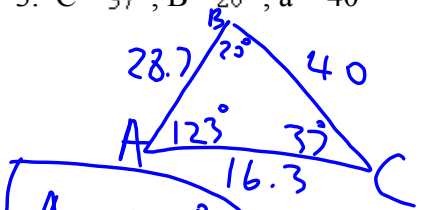
2. b = 5 ft., c = 4 ft., A = 120°

$K = \frac{1}{2} \cdot 5 \cdot 4 \sin 120°$

$K = 8.7 ft^2$.

Solve each triangle. Round answers to the nearest tenth, if necessary

3. $C = 37°$, $B = 20°$, $a = 40$



$A = 123°$

$\frac{b}{\sin 20°} = \frac{40}{\sin 123°}$

$b = \frac{40 \sin 20°}{\sin 123°}$

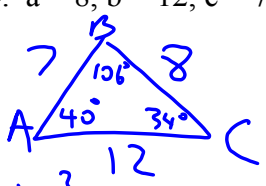
$b = 16.3$

$\frac{c}{\sin 37°} = \frac{40}{\sin 123°}$

$c = \frac{40 \sin 37°}{\sin 123°}$

$c = 28.7$

4. $a = 8$, $b = 12$, $c = 7$



$8^2 = 7^2 + 12^2 - 2(7)(12)\cos A$

$A = \cos^{-1}\left(\frac{8^2 - 7^2 - 12^2}{-2(7)(12)}\right)$

$A = 40°$

$\frac{\sin B}{12} = \frac{\sin 40°}{8}$

$B = \sin^{-1}\left(\frac{12 \sin 40°}{8}\right)$

$B = 74.6°, 105.4°$

Use the law of cosines to find the missing side length of ΔABC to the nearest tenth.

5. a = 5, b = 12, C = 46°

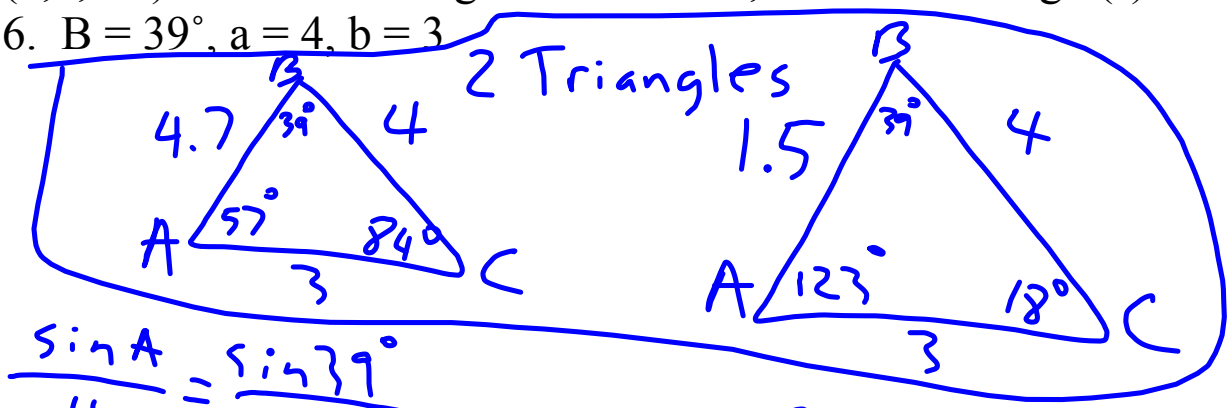
$$c^2 = 5^2 + 12^2 - 2(5)(12)\cos 46°$$

$$c = \sqrt{5^2 + 12^2 - 2(5)(12)\cos 46°}$$

$$c = 9.3$$

State the number of triangles determined by the given information (0,1,or2). If 1 or 2 triangles are formed, solve the triangle(s).

6. B = 39°, a = 4, b = 3



$$\frac{\sin A}{4} = \frac{\sin 39^\circ}{3}$$

$$A = \sin^{-1}\left(\frac{4\sin 39^\circ}{3}\right)$$

$$A = 57^\circ,\ 123^\circ$$

$$\frac{c}{\sin 84^\circ} = \frac{3}{\sin 39}$$

$$c = \frac{3\sin 84}{\sin 39} = 4.7$$

$$\frac{c}{\sin 18} = \frac{3}{\sin 39^\circ}$$

$$c = \frac{3\sin 18}{\sin 39} = 1.5$$