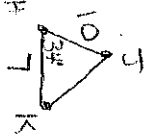


LOSI, LOC, Area
Review before Ambiguous-Case

Law of Cosines Review



1) Triangle HJK has angle $H = 34^\circ$, $j = 7$, and $k = 10$.
Find side h .

$$h^2 = j^2 + k^2 - 2jk \cos H$$

$$h^2 = 7^2 + 10^2 - 2(7)(10) \cos 34^\circ$$

$$h^2 = 32.9$$

$$h = 5.7$$

2) Triangle BAT has $b = 9$, $a = 12$, and $t = 14$.
Find angle B .

$$b^2 = a^2 + t^2 - 2at \cos B$$

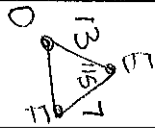
$$9^2 = 12^2 + 14^2 - 2(12)(14) \cos B$$

$$-259 = -336 \cos B$$

$$\frac{259}{336} = \cos B$$

$$B = 39.6^\circ$$

Area of Triangles Review



3) Triangle DEF has angle $E = 115^\circ$, $d = 7$, and $f = 13$.
Find the area of the triangle.

$$A = \frac{1}{2} (7)(13) \sin 115$$

$$A = 41.2 \text{ u}^2$$

4) Triangle AXE has $a = 24$, $x = 53$, and $e = 39$.
Find the area of the triangle.

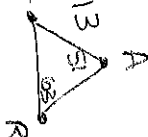
$$S = \frac{24 + 53 + 39}{2} = 58$$

$$A = \frac{\sqrt{S(S-24)(S-53)(S-39)}}{2}$$

$$A = \frac{\sqrt{58(34)(5)(19)}}{2}$$

$$A = 187.34 \text{ u}^2$$

Law of Sines Review



5) Triangle TAR has $A = 51^\circ$, $R = 63^\circ$, and $t = 13$.
Find side a .

$$\frac{13}{\sin 63} = \frac{a}{\sin 51}$$

$$a = 11.3$$

6) Triangle HOT has $H = 29^\circ$, $T = 25^\circ$, and $o = 30$.
Find side h .

$$O = 180 - 29 - 25 = 126^\circ$$

$$\frac{h}{\sin 29} = \frac{30}{\sin 126}$$

$$h = 18$$

7) Triangle SHY has $S = 108^\circ$, $s = 9$, and $h = 7$.
Find angle H .

$$\frac{9}{\sin 108} = \frac{7}{\sin H}$$

$$H = 47.7^\circ$$

Answers

- 1) $h = 5.7$
- 2) $B = 39.6^\circ$
- 3) Area = 41.2 units²
- 4) Area = 432.8 units²
- 5) $a = 11.3$
- 6) $h = 18$
- 7) $H = 47.7^\circ$
- 8) 64.8° and 115.2°

8) Triangle CAR has $C = 20.5^\circ$, $r = 31$ and $c = 12$

Find angle R .

$$\frac{12}{\sin 20.5} = \frac{31}{\sin R}$$

$$R = 64.8^\circ$$

so $180 - 64.8 = 115.2^\circ$