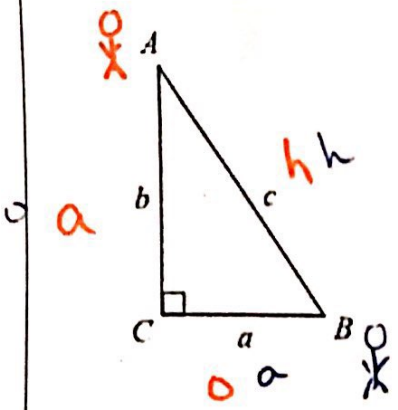
Name: _____ 8.3 Trigonometry

Main Ideas/ Questions	Notes

TRIGONOMETRIC RATIOS



Each acute angle of a right triangle has the following trigonometric ratios:

SINE	The ratio of the leg **opposite** the angle to the **hypotenuse**.	• Sin $A = \frac{o}{h} = \frac{a}{c}$ • Sin $B = \frac{o}{h} = \frac{b}{c}$
COSINE	The ratio of the leg **adjacent** to the angle to the **hypotenuse**	• Cos $A = \frac{a}{h} = \frac{b}{c}$ • Cos $B = \frac{a}{h} = \frac{a}{c}$
TANGENT	The ratio of the leg **opposite** the angle to the leg **adjacent** to the angle.	• Tan $A = \frac{o}{a} = \frac{a}{b}$ • Tan $B = \frac{o}{a} = \frac{b}{a}$

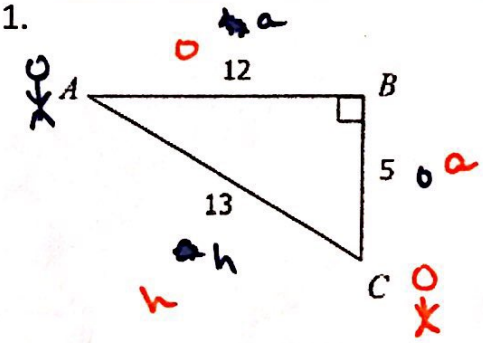
* REMEMBER!! *

SOH CAH TOA

- Sin = $\frac{opp.}{hyp}$
- Cos = $\frac{adj.}{hyp.}$
- Tan = $\frac{opp}{adj.}$

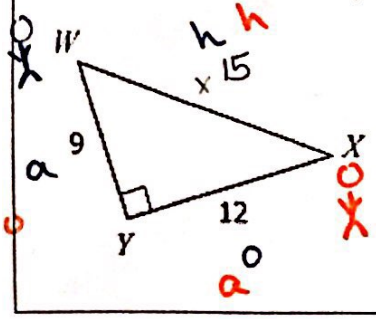
Practice! Give each trigonometric ratio in simplest form.

1.



- Sin $A = \frac{o}{h} = \frac{5}{13}$
- Cos $A = \frac{a}{h} = \frac{12}{13}$
- Tan $A = \frac{o}{a} = \frac{5}{12}$
- Sin $C = \frac{o}{h} = \frac{12}{13}$
- Cos $C = \frac{a}{h} = \frac{5}{13}$
- Tan $C = \frac{o}{a} = \frac{12}{5}$

2.



$9^2 + 12^2 = x^2$

$81 + 144 = x^2$

$225 = x^2$

$\sqrt{225} = x$

$15 = x$

- Sin $W = \frac{o}{h} = \frac{12}{15} = \frac{4}{5}$
- Cos $W = \frac{a}{h} = \frac{9}{15} = \frac{3}{5}$
- Tan $W = \frac{o}{a} = \frac{12}{9} = \frac{4}{3}$
- Sin $X = \frac{o}{h} = \frac{9}{15} = \frac{3}{5}$
- Cos $X = \frac{a}{h} = \frac{12}{15} = \frac{4}{5}$
- Tan $X = \frac{o}{a} = \frac{9}{12} = \frac{3}{4}$