Name_____ Date_____

8.7 – Tangent, Sine, and Cosine (Part 1)

Use this helpful mnemonic to remember the following ratios: Oscar Has A Heap Of Apples.
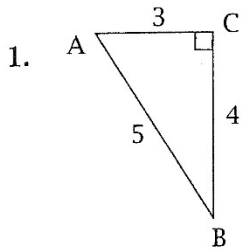
Leg opposite to X | Hypotenuse

Leg adjacent to X

$\text{Sine } x = \dfrac{\text{Opposite leg}}{\text{Hypotenuse}}$

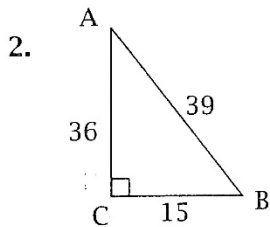$\text{Cosine } x = \dfrac{\text{Adjacent leg}}{\text{Hypotenuse}}$

$\text{Tangent } x = \dfrac{\text{Opposite leg}}{\text{Adjacent leg}}$

Note: The trigonometric ratios hold only for right triangles.

Given a right triangle find each trigonometric ratio. Leave your answer as a **fraction**. The first three have been done for you.
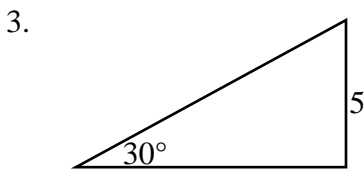
1.
A 3 C
5 4
B

$\sin A = \dfrac{4}{5}$

$\cos A = \dfrac{3}{5}$

$\tan A = \dfrac{4}{3}$

$\sin B =$

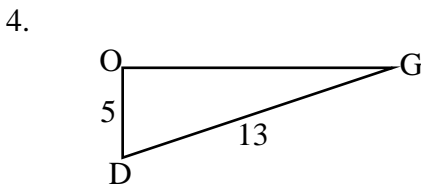$\cos B =$

$\tan B =$

2.
A
36 39
C 15 B

$\sin A =$

$\cos A =$

$\tan A =$

$\sin B =$

$\cos B =$

$\tan B =$

Find the trigonometric ratio for each of the right triangles. Leave your answer as **simplified fraction** and a **decimal**. Round your answer to 4 decimal places.

3.
5
30°

$\sin 30° = \qquad =$

$\cos 30° = \qquad =$

$\tan 30° = \qquad =$

$\sin 60° = \qquad =$

$\cos 60° = \qquad =$

$\tan 60° = \qquad =$

4.
O _____ G
5
13
D

$\sin D = \qquad =$

$\cos D = \qquad =$

$\tan D = \qquad =$

$\sin G = \qquad =$

$\cos G = \qquad =$

$\tan G = \qquad =$

Using the Trigonometric Table

Find the trigonometric ratio of the following using your trigonometric table.

5. $\sin 30° =$ _____

6. $\cos 45° =$ _____

7. $\sin 60° =$ _____

8. $\tan 45° =$ _____

9. $\cos 22° =$ _____

10. $\tan 48° =$ _____

Using the trigonometric table, find the closest whole degree measure that will give you the following trigonometric ratio.

11. $\cos x = .7660$

12. $\tan x = .4040$

13. $\sin x = .9520$

14. $\sin \theta = .8000$

15. $\cos \theta = \dfrac{1}{2}$

16. $\tan \theta = \dfrac{3}{4}$

17. $\sin \theta = \dfrac{\sqrt{3}}{2}$

18. $\cos \theta = \dfrac{\sqrt{2}}{2}$

Using your calculator, find the angle with the given trigonometric. Round your answer to the nearest degree.

19. $\cos x = \dfrac{7}{19}$

20. $\tan x = \dfrac{101}{90}$

21. $\sin x = \dfrac{20}{21}$

22. $\cos x = \dfrac{45}{76}$

23. $\tan x = \dfrac{15}{4}$

24. $\sin x = \dfrac{8}{99}$