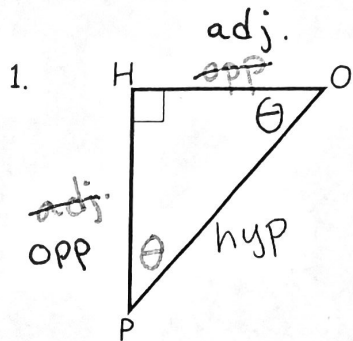


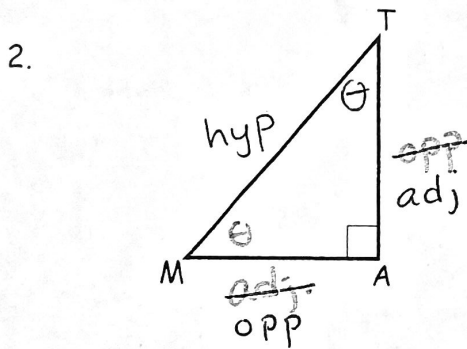
Part I: Using the given triangle in each problem state which SIDE is adjacent and opposite to the given angle. Also, state the hypotenuse.



adjacent to $\angle P$ HP opposite to $\angle P$ HO

adjacent to $\angle O$ HO opposite to $\angle O$ HP

hypotenuse PO

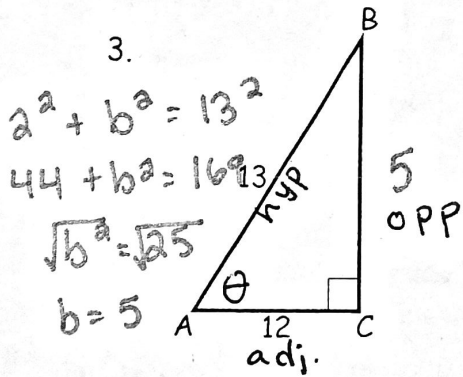


adjacent to $\angle M$ MA opposite to $\angle M$ TA

adjacent to $\angle T$ TA opposite to $\angle T$ MA

hypotenuse MT

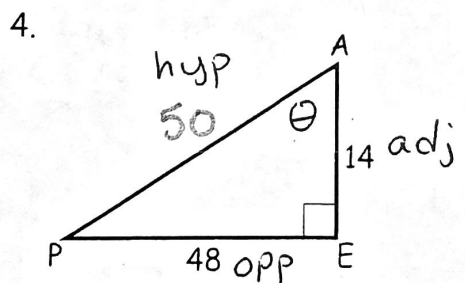
Part II: Find the missing side length of the right triangle. Then state the three trig ratios for $\angle A$ (leave all answers in fraction form).



$$\sin \angle A = \frac{5}{13}$$

$$\cos \angle A = \frac{12}{13}$$

$$\tan \angle A = \frac{5}{12}$$



$$48^2 + 14^2 = c^2$$

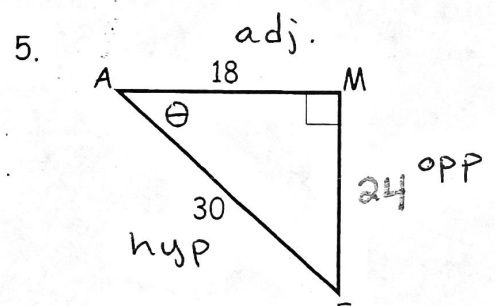
$$2304 + 196 = c^2$$

$$\sqrt{2500} = \sqrt{c^2}$$

$$\sin \angle A = \frac{48}{50} \rightarrow \frac{24}{25} \quad 50 = c$$

$$\cos \angle A = \frac{14}{50} \rightarrow \frac{7}{25}$$

$$\tan \angle A = \frac{48}{14} \rightarrow \frac{24}{7}$$



$$18^2 + b^2 = 30^2$$

$$324 + b^2 = 900$$

$$\sqrt{b^2} = \sqrt{576}$$

$$b = 24 \quad \frac{24}{30} \rightarrow \frac{4}{5}$$

$$\sin \angle A = \frac{18}{30} \rightarrow \frac{3}{5}$$

$$\cos \angle A = \frac{24}{18} \rightarrow \frac{4}{3}$$

Part III: a) Use a calculator to evaluate the given value to four decimal places.

6. $\sin 42^\circ$

0.6691

7. $\tan 81^\circ$

6.3138

8. $\cos 56^\circ$

0.5592

Part IV: Calculate the equivalent co-functions to the trig ratios below.

9. $\cos 81^\circ$

\downarrow
 $\sin(90-81)$
 $\sin(9)$

10. $\sin 81^\circ$

\downarrow
 $\cos(90-81)$
 $\cos(9)$

11. $\cos 24^\circ$

\downarrow
 $\sin(90-24)$
 $\sin(66)$

12. $\sin 75^\circ$

\downarrow
 $\cos(90-75)$
 $\cos(15)$

13. $\cos 2^\circ$

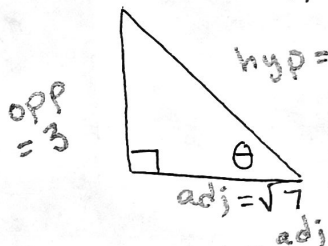
\downarrow
 $\sin(90-2)$
 $\sin(88)$

14. $\sin 57.5^\circ$

\downarrow
 $\cos(90-57.5)$
 $\cos(32.5)$

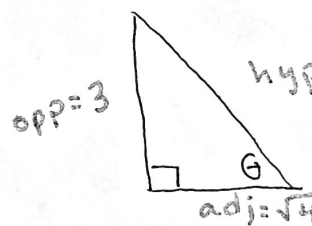
Part V: Use the given ratio and find the given ratio (HINT: draw a triangle)

15. $\sin(\theta) = \frac{3}{4}$, find $\cos(\theta)$



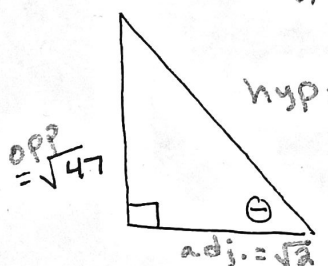
$3^2 + b^2 = 4^2$
 $9 + b^2 = 16$
 $\sqrt{b^2} = \sqrt{7}$
 $b = \sqrt{7}$
 $\cos(\theta) = \frac{\sqrt{7}}{4}$

16. $\tan(\theta) = \frac{3}{\sqrt{4}}$, find $\sin(\theta)$



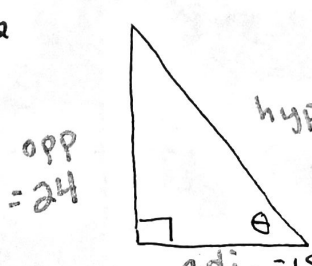
$3^2 + \sqrt{4}^2 = c^2$
 $9 + 4 = c^2$
 $\sqrt{13} = \sqrt{c^2}$
 $\sqrt{13} = c$
 $\sin(\theta) = \frac{3}{\sqrt{13}}$

17. $\cos(\theta) = \frac{\sqrt{2}}{7}$, find $\sin(\theta)$



$\sqrt{a^2} + b^2 = 7^2$
 $2 + b^2 = 49$
 $\sqrt{b^2} = \sqrt{47}$
 $b = \sqrt{47}$
 $\sin(\theta) = \frac{\sqrt{47}}{7}$

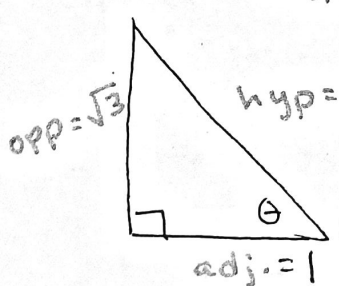
18. $\sin(\theta) = \frac{24}{30}$, find $\tan(\theta)$



$24^2 + b^2 = 30^2$
 $576 + b^2 = 900$
 $\sqrt{b^2} = \sqrt{324}$
 $b = 18$

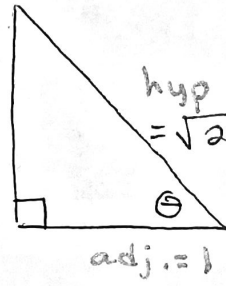
$\tan(\theta) = \frac{24}{18}$
 \downarrow
 $\frac{4}{3}$

19. $\sin(\theta) = \frac{\sqrt{3}}{2}$, find $\tan(\theta)$



$\sqrt{3}^2 + b^2 = 2^2$
 $3 + b^2 = 4$
 $\sqrt{b^2} = \sqrt{1}$
 $b = 1$
 $\tan(\theta) = \frac{\sqrt{3}}{1}$

20. $\tan(\theta) = 1$, find $\cos(\theta)$



$1^2 + 1^2 = c^2$
 $1 + 1 = c^2$
 $\sqrt{2} = \sqrt{c^2}$
 $\sqrt{2} = c$
 $\cos(\theta) = \frac{1}{\sqrt{2}}$