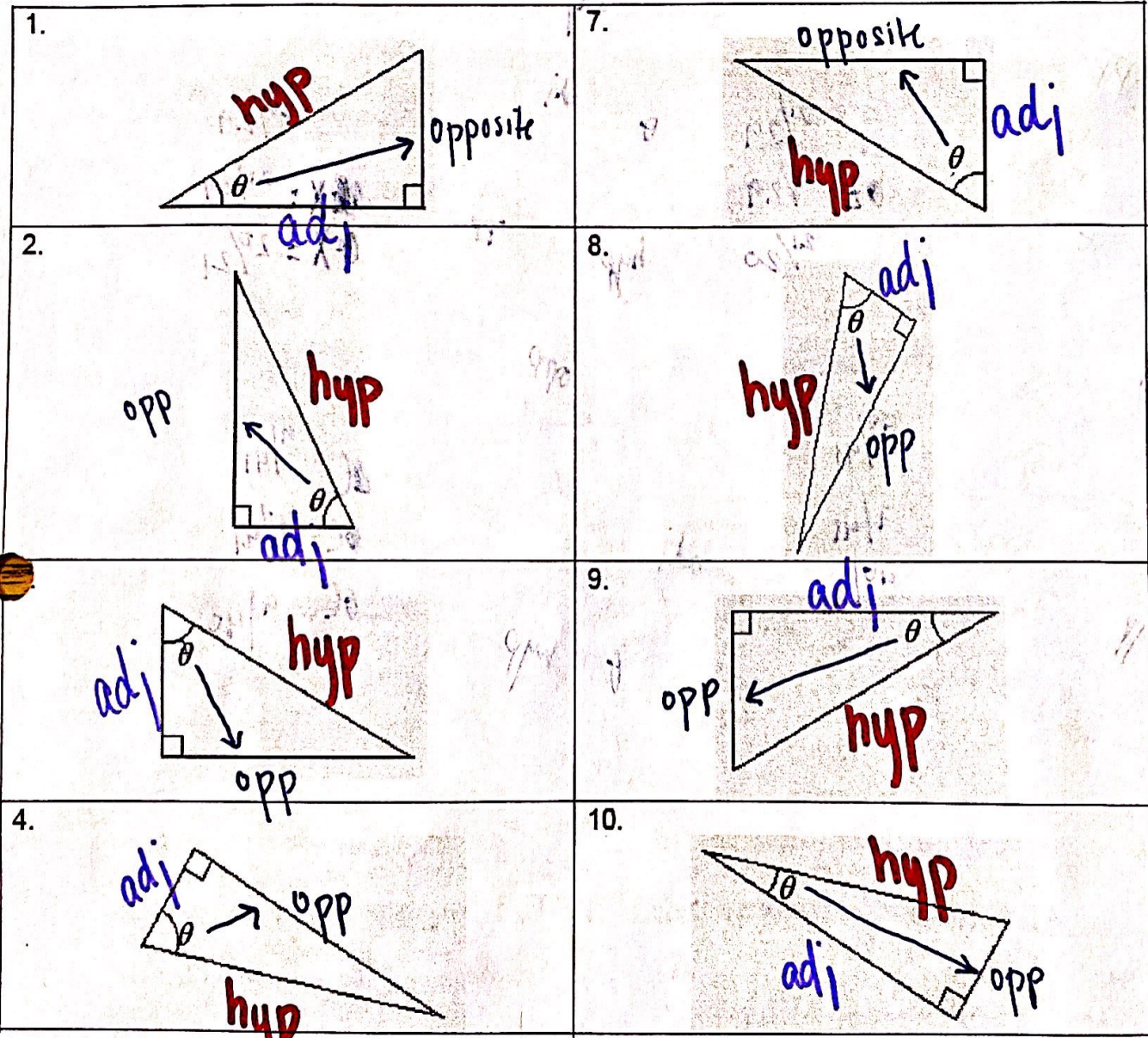


# Trigonometric Ratios NOTES

The Greek letter "theta",  $\theta$ , is used to represent an angle.

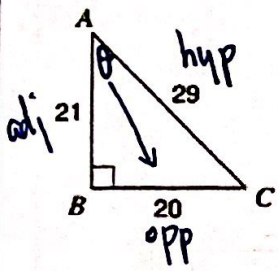
- The side **opposite** of the angle is directly across from the angle.
- The side **adjacent** to the angle is next to the angle.
- The **hypotenuse** is the side directly across from the right angle.



## Trigonometric Relationships

$$\sin \theta = \frac{\text{opp}}{\text{hyp}} ; \quad \cos \theta = \frac{\text{adj}}{\text{hyp}} ; \quad \tan \theta = \frac{\text{opp}}{\text{adj}}$$

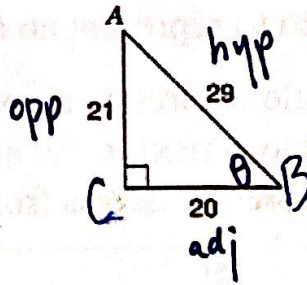
Find the value of each trig ratio.



$$\sin A = \frac{20}{29}$$

$$\cos A = \frac{21}{29}$$

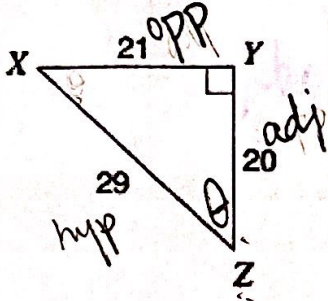
$$\tan A = \frac{20}{21}$$



$$\sin B = \frac{21}{29}$$

$$\cos B = \frac{20}{29}$$

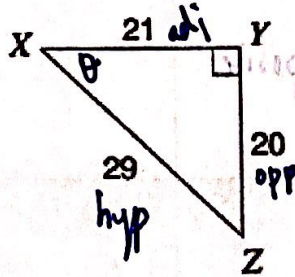
$$\tan B = \frac{21}{20}$$



$$\sin Z = \frac{21}{29}$$

$$\cos Z = \frac{20}{29}$$

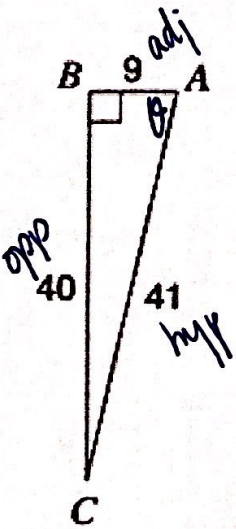
$$\tan Z = \frac{21}{20}$$



$$\sin X = \frac{20}{29}$$

$$\cos X = \frac{21}{29}$$

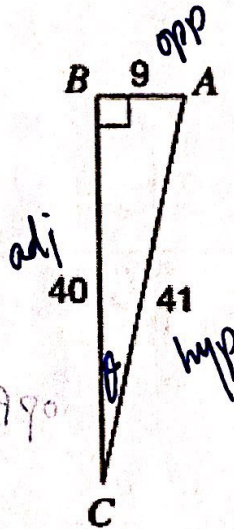
$$\tan X = \frac{20}{21}$$



$$\sin A = \frac{40}{41}$$

$$\cos A = \frac{9}{41}$$

$$\tan A = \frac{40}{9}$$



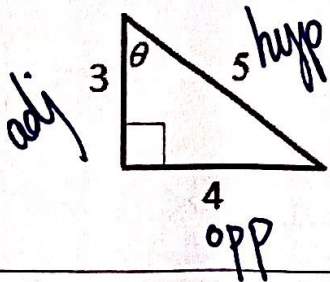
$$\sin C = \frac{9}{41}$$

$$\cos C = \frac{40}{41}$$

$$\tan C = \frac{9}{40}$$

### Trig Ratios of Similar Triangles

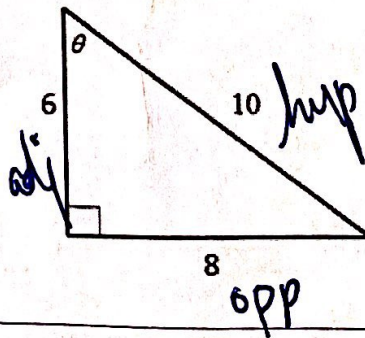
The triangles below are similar. Identify the sine, cosine, and tangent of theta in each triangle.



$$\sin \theta = \frac{4}{5}$$

$$\cos \theta = \frac{3}{5}$$

$$\tan \theta = \frac{4}{3}$$



$$\sin \theta = \frac{8}{10} = \frac{4}{5}$$

$$\cos \theta = \frac{6}{10} = \frac{3}{5}$$

$$\tan \theta = \frac{8}{6} = \frac{4}{3}$$