

Midterm Review Part II

MS, RAMIREZ

RM 406

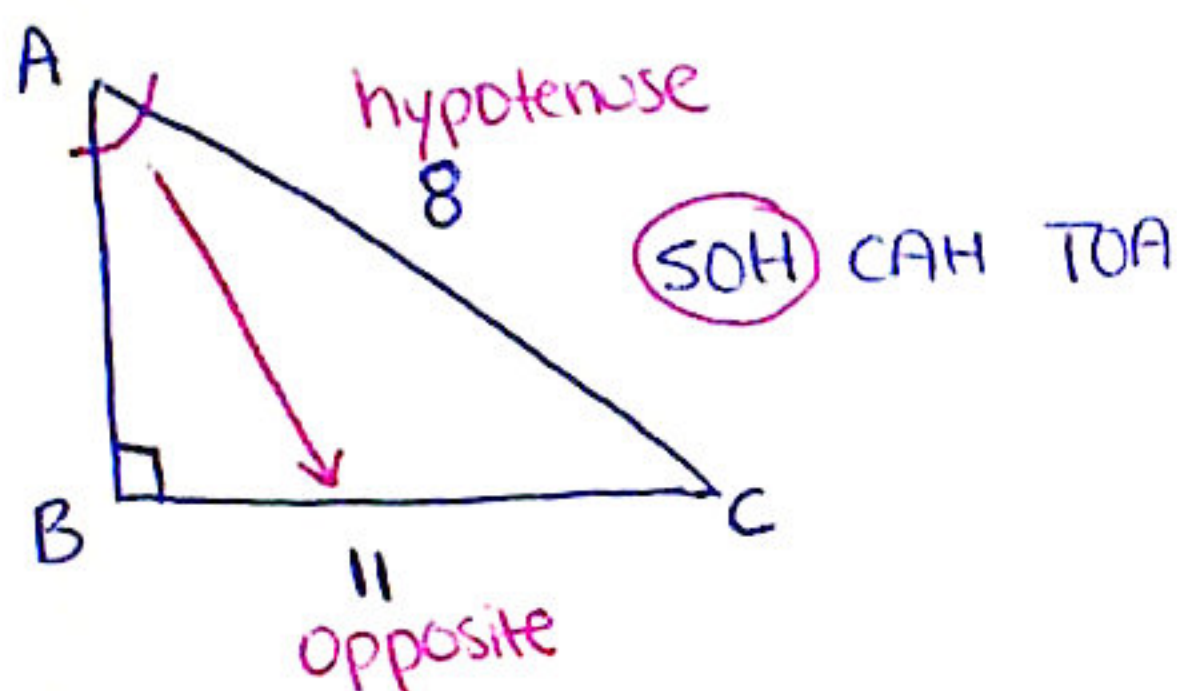
11. In $\triangle ABC$, $AC = 8$ cm and $BC = 11$ cm and $\angle B$ is 90° . Determine the correct trigonometric ratio of $\angle A$.

a. 0.520

b. 0.728

c. 1.375

d. 1.536

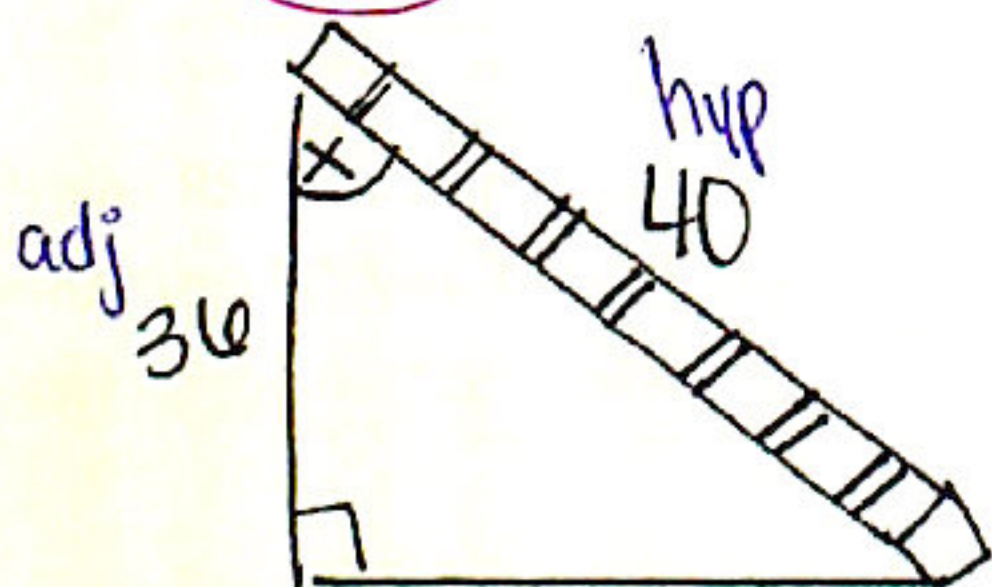


$$\sin A = \frac{11}{8}$$

$$\sin A = \boxed{1.375}$$

13. The top of a 40-foot ladder which is leaning against a wall reaches the wall at a point 36 feet from the ground. Find, to the nearest degree, the angle which the ladder makes with the wall.

(SOH) CAH TOA



$$\cos x = \frac{36}{40}$$

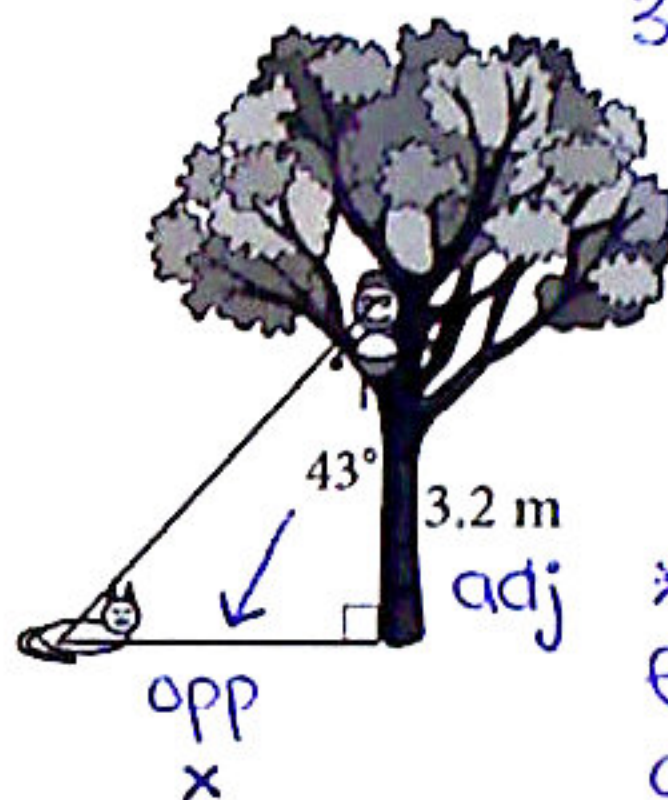
$$\cos x = 0.9$$

$$\boxed{x \approx 26^\circ}$$

look for the decimal closest to 0.9000 in the trig chart.

12. Jose is sitting in a tree, so that his eyes are 3.2 m above the ground. When he looks down at an angle of depression of 43° , he can see his cat sitting in the yard. Find the distance from the base of the tree to the cat.

(SOH) CAH TOA



$$3.2 \times \tan 43^\circ = \frac{x}{3.2} \times 3.2$$

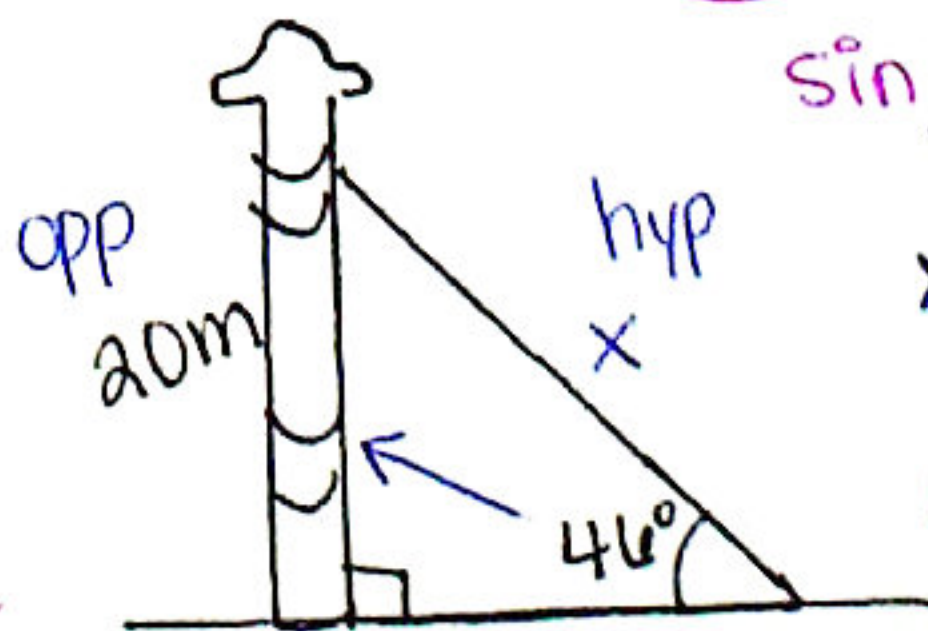
$$3.2 \times 0.9325 = x$$

$$\boxed{2.98 = x}$$

* The distance from the base of the tree to the cat is 2.98 meters.

14. A support wire is attached to the tower 20 m from the top. If the support wire and the ground form an angle of 46 degrees, what is the length of the support wire, to the nearest tenth.

(SOH) CAH TOA



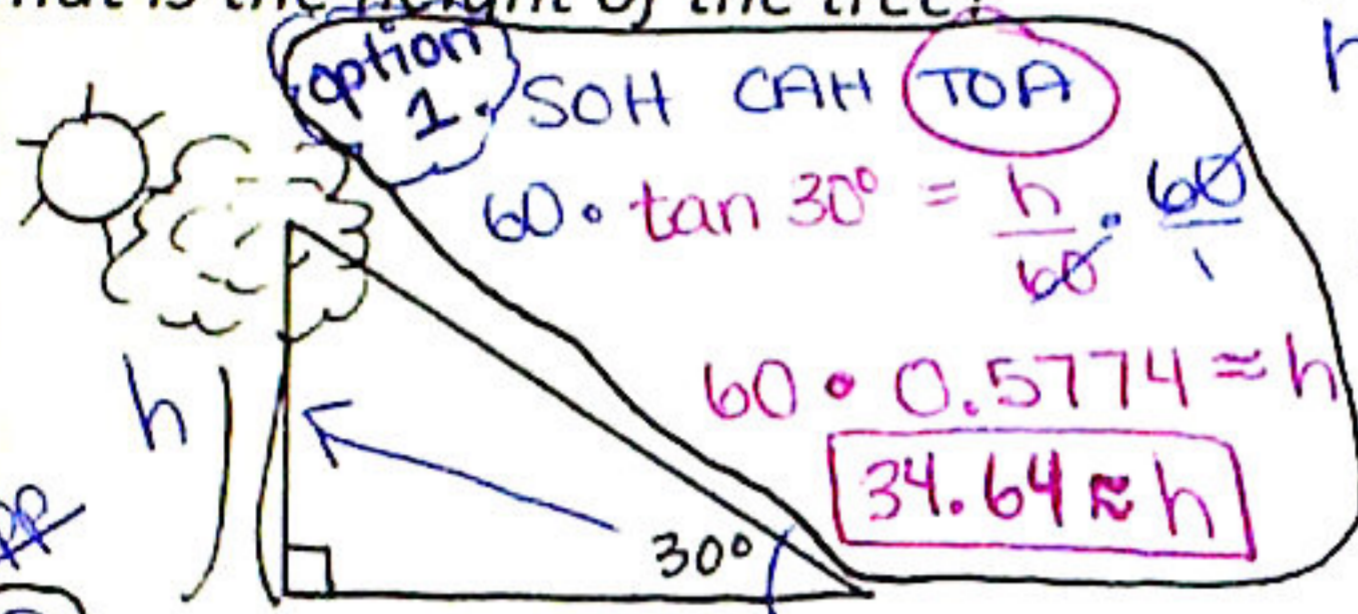
$$\sin 46^\circ = \frac{20}{x}$$

$$x = \frac{20}{\sin 46^\circ}$$

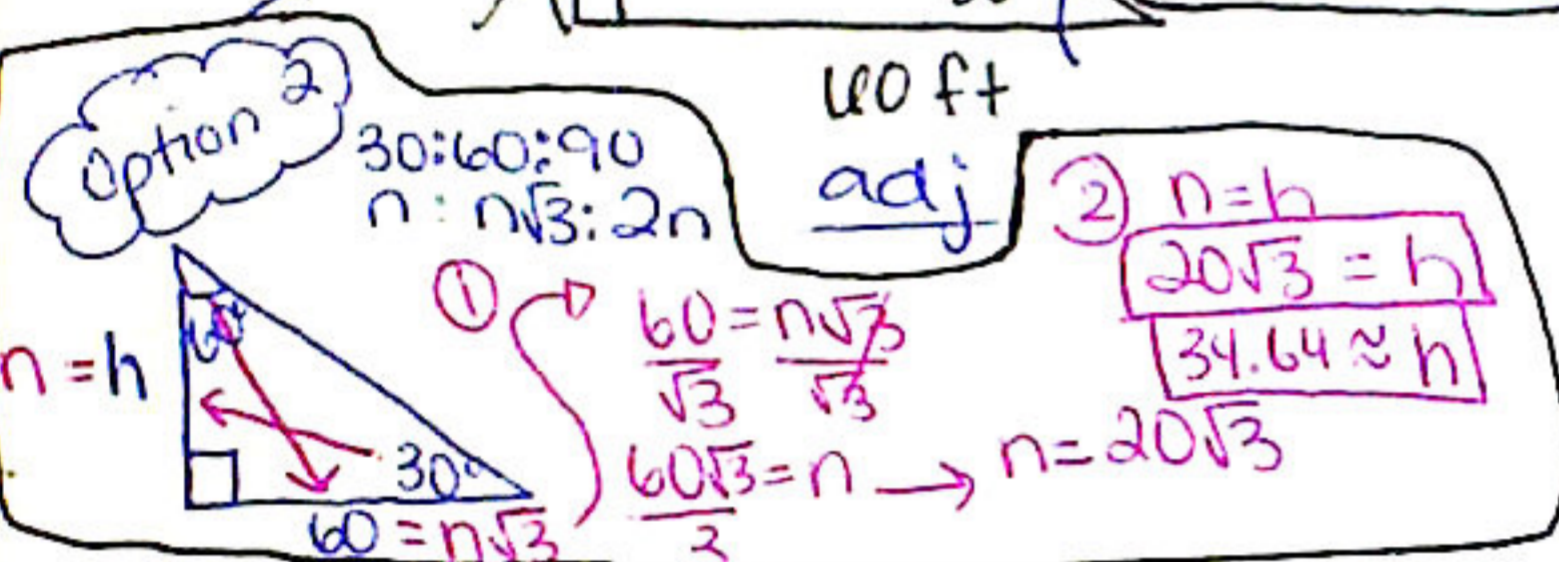
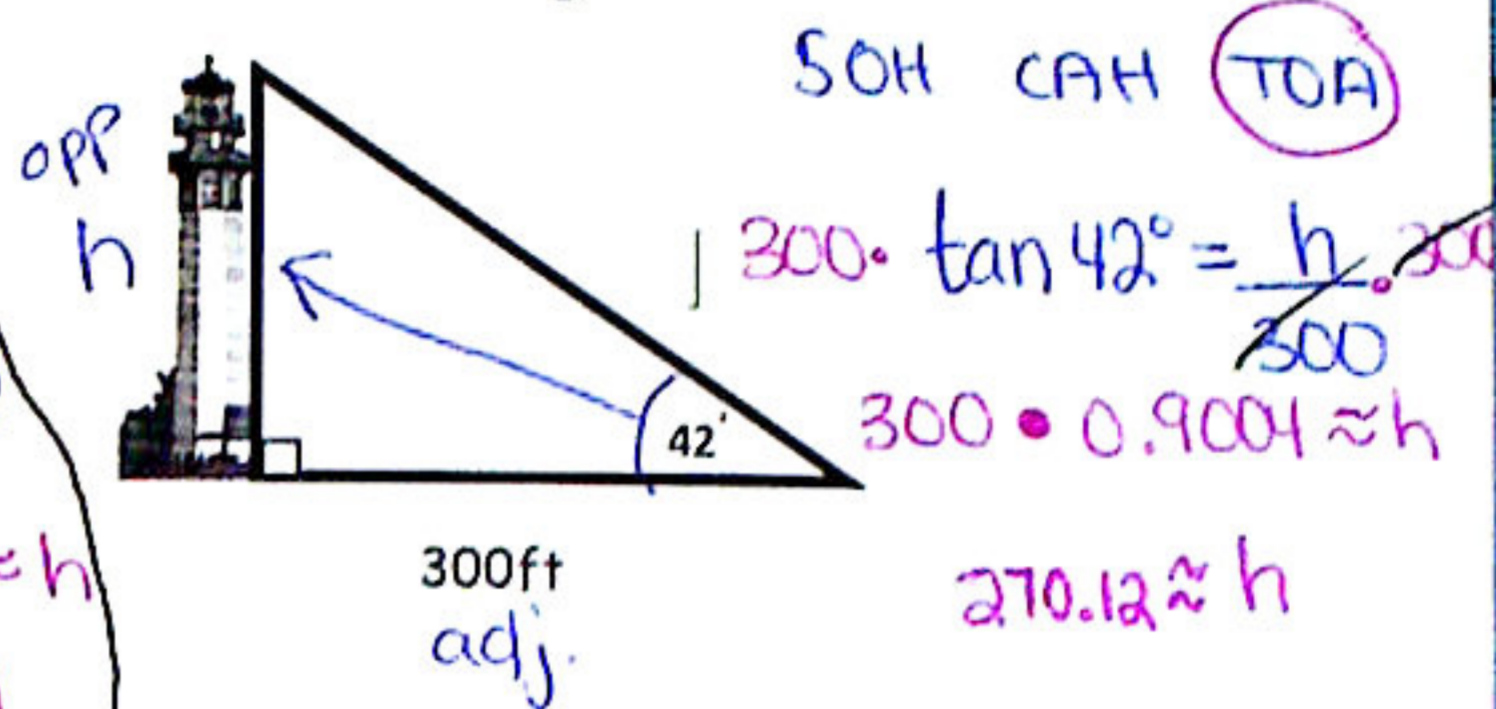
$$x = \frac{20}{0.7193}$$

$$\boxed{x \approx 27.80}$$

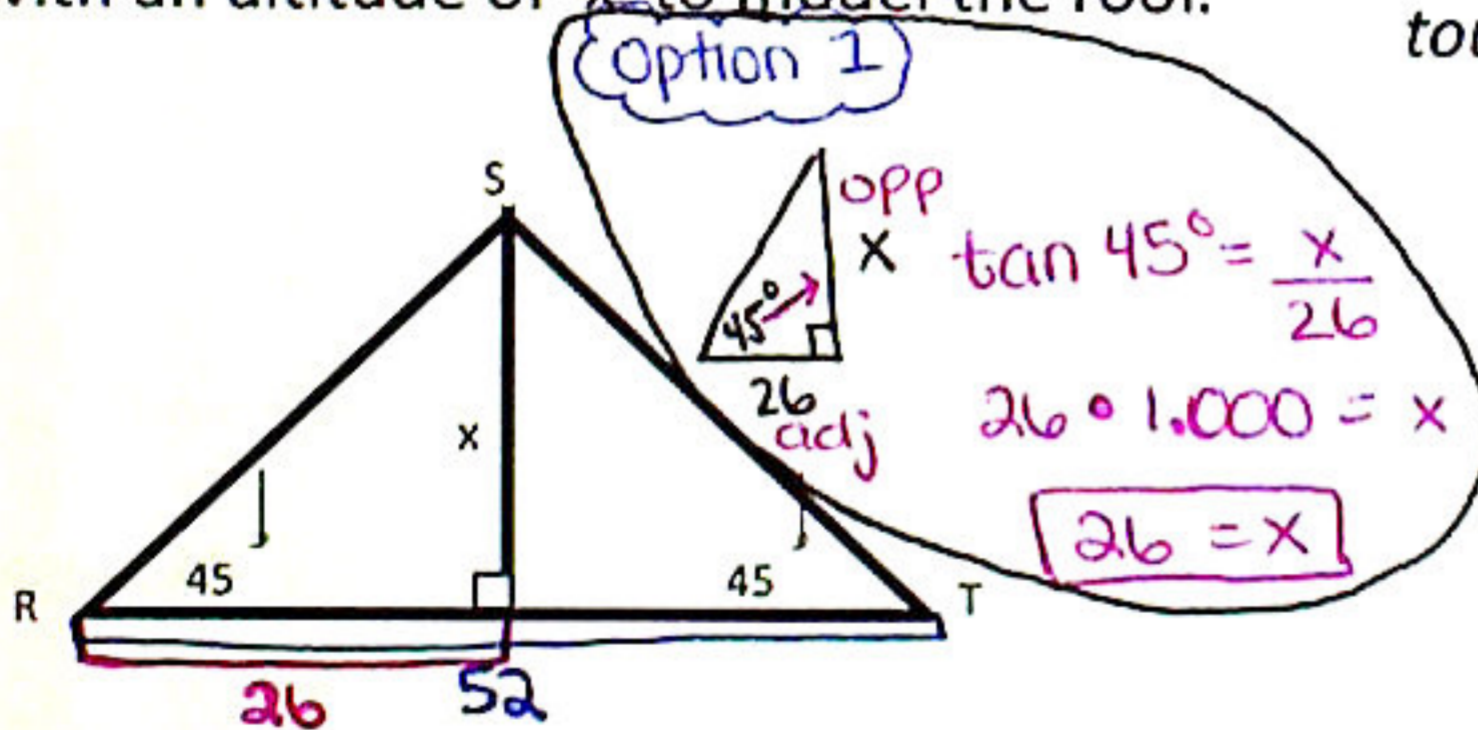
15. A tree casts a 60 foot shadow. The angle of elevation is 30° . This is the angle at which you look up to the top of the tree from the ground. What is the height of the tree?



16. Approximately how tall is the lighthouse if the angle of elevation shown is 42 degrees?

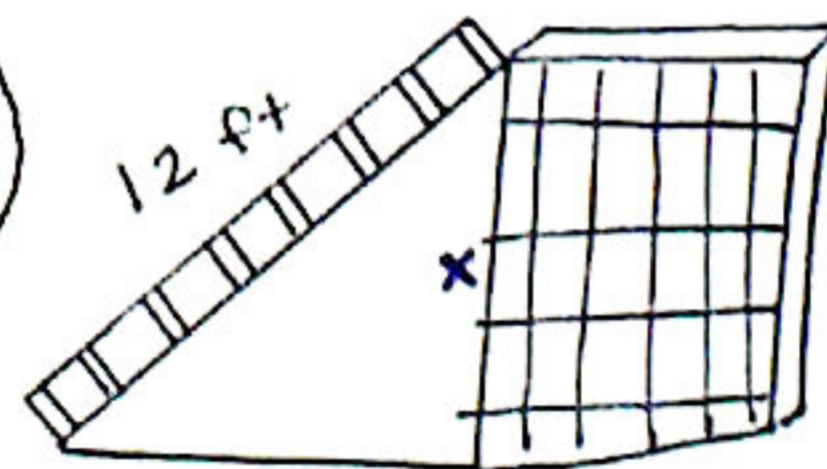


17. Ms. Garcia is trying to calculate the height of the peak of the roof of her house. She draws the triangle below with an altitude of x to model the roof.



Angle RST is a right triangle and RT measures 52 feet. What is the height of the peak of the roof (x) in feet?

18. The bottom of a ladder must be placed 3 feet from a wall. The ladder is 12 feet long. How far above the ground does the ladder touch the wall?



3 ft Pythagorean Thm:

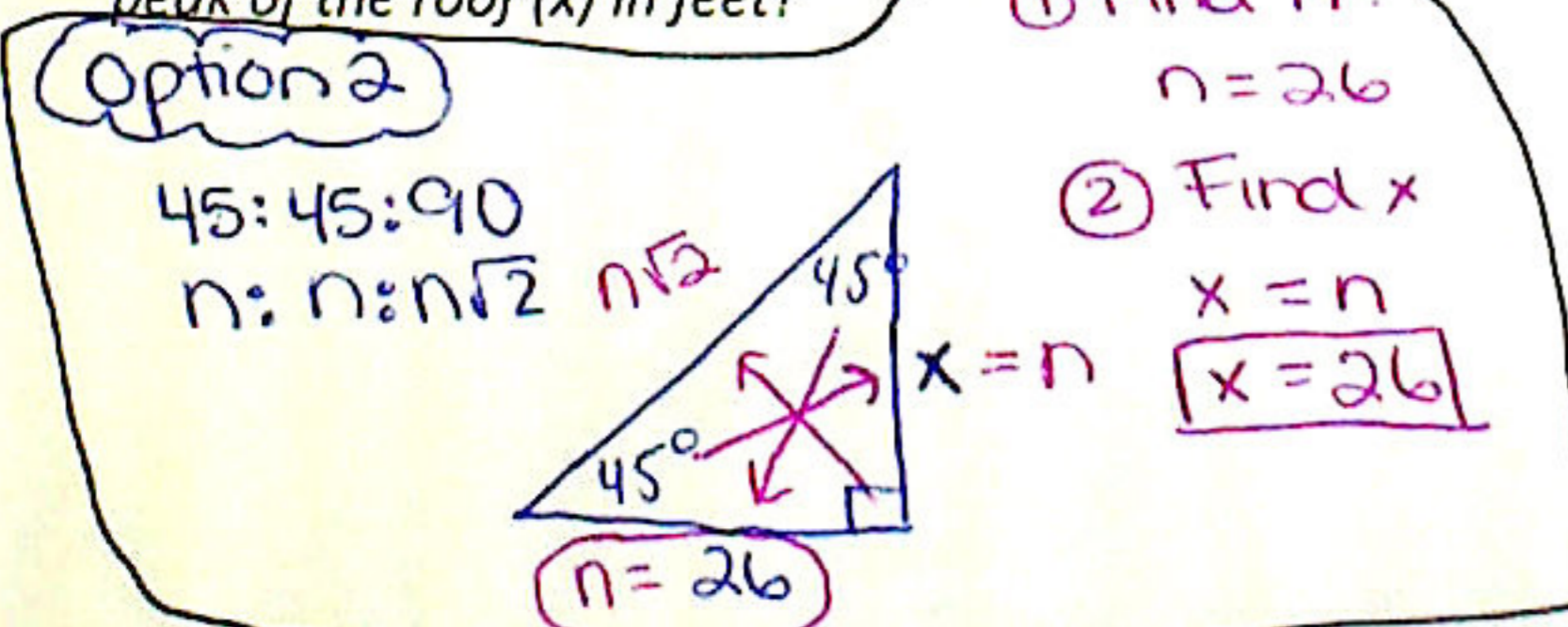
$$3^2 + x^2 = 12^2$$

$$9 + x^2 = 144$$

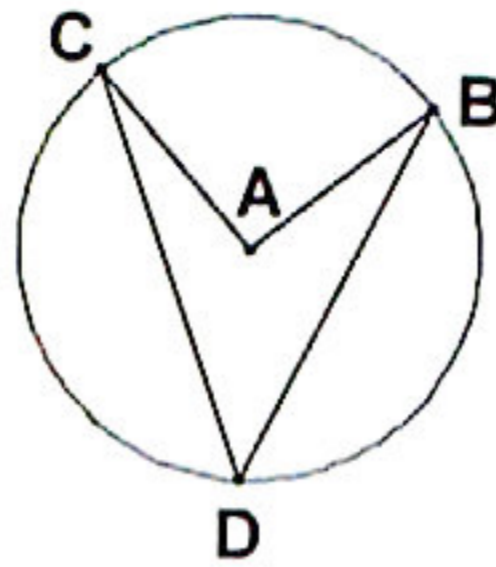
$$x^2 = 135$$

$$x = \sqrt{135} \text{ or } 3\sqrt{15}$$

$$x \approx 11.62$$



19. Circle A has a central angle CAB and an inscribed angle CDB that intercept the same arc.

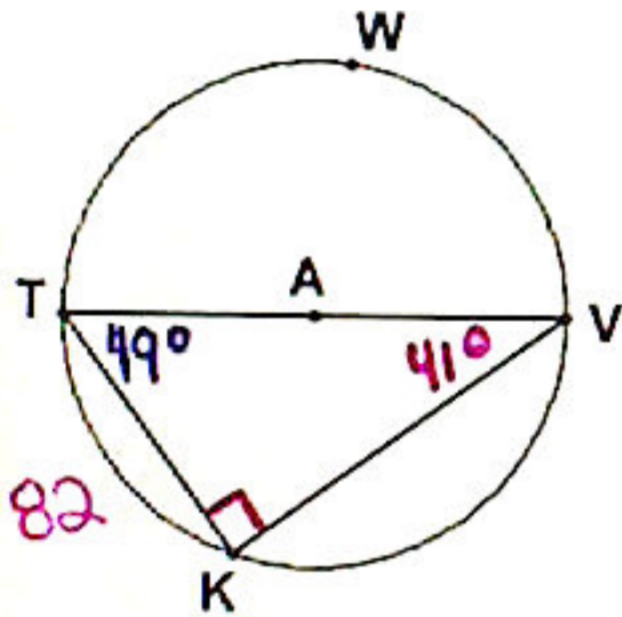


* The central angle CAB is twice the size of $\angle CDB$.

What is the relationship between the measure of angle CAB and the measure of angle CDB?

$$m \angle CAB = \underline{2} m \angle CDB$$

20. In circle A, if arc TK measures 82, what is the measure of angle V and T?

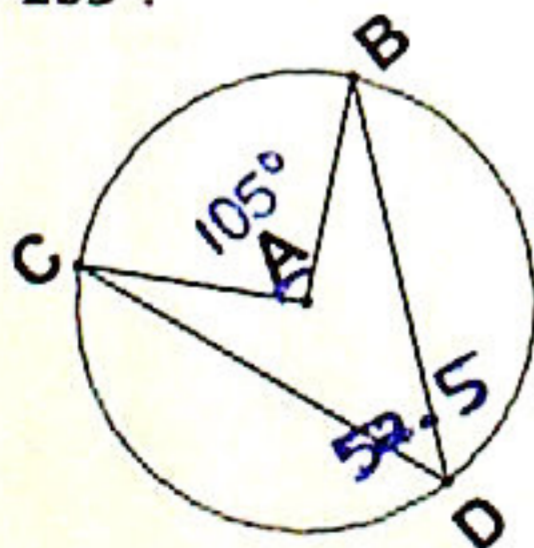


$$\angle V = \frac{82}{2} = 41$$

$$\angle T = 49^\circ \text{ since}$$

$$\begin{array}{r} 90 \\ + 41 \\ \hline 131 \end{array} \quad \begin{array}{r} 180 \\ - 131 \\ \hline \boxed{49} \end{array}$$

21. The circle has a center at point A. What is the measure of angle CDB if the measure of angle CAB is 105° .



$$\frac{105}{2} = 52.5^\circ$$

$$\boxed{\angle D = 52.5^\circ}$$