Today's fun fact (s): $\sqrt{2} \approx 1.4 \quad \sqrt{3} \approx 1.7$

$45^{\circ}-45^{\circ}-90^{\circ}$

$$
30^{\circ}-60^{\circ}-90^{2}
$$



Trig functions (Ratios)

$$
\begin{aligned}
& \sin (\text { sine })=\frac{\text { opposite }}{\text { hypotenuse }}=\frac{O}{H} \csc (\text { cosecant })=\frac{H}{O} \\
& \cos (\text { cosine })=\frac{\text { Adjacent }}{\text { Hypotenuse }}=\frac{A}{H} \sec (\text { secant })=\frac{H}{A} \\
& \tan (\text { tangent })=\frac{\text { opposite }}{\text { Adjacent }}=\frac{O}{A} \cot (\text { cotangent })=\frac{A}{O}
\end{aligned}
$$

SOH-CAH-TOA


$$
\begin{aligned}
& \sin 45^{\circ}=\frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}=\frac{\sqrt{2}}{2} \\
& \cos 45^{\circ}=\frac{1}{\sqrt{2}}=\frac{\sqrt{2}}{2} \\
& \tan 45^{\circ}=\frac{1}{1}=1 \\
& \sin \frac{\pi}{4}=\frac{\sqrt{2}}{2} \\
& \cos \frac{\pi}{4}=\frac{\sqrt{2}}{2} \\
& \tan \frac{\pi}{4}=1
\end{aligned}
$$

