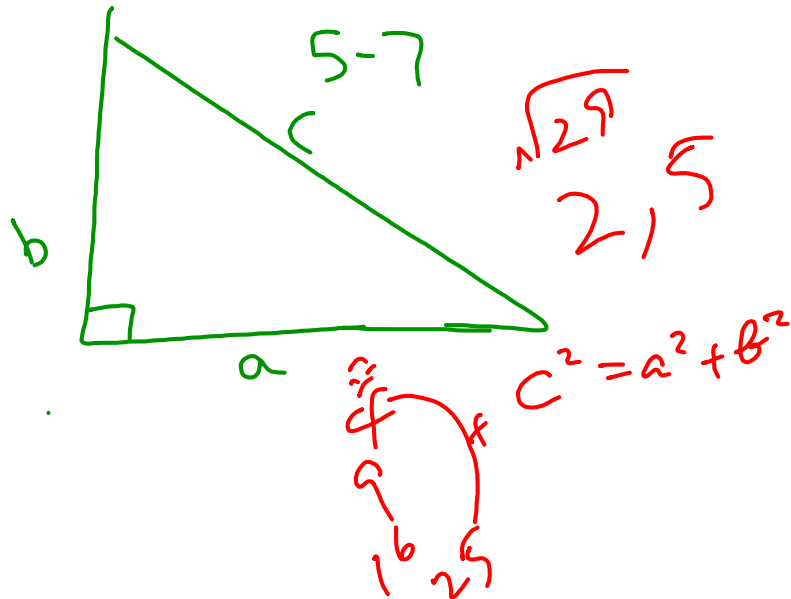


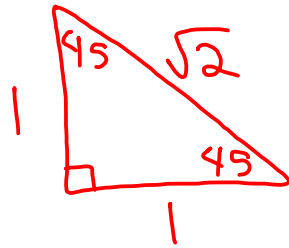
What integer lengths can legs a & b have in order for the hypotenuse to be an irrational number between 5 & 7?



Triangle	AB	BC	AC	$\frac{AB}{AC}$	$\frac{BC}{AC}$	$\frac{BC}{AB}$
30	1	$\sqrt{3}$	2	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\frac{1}{\sqrt{3}}$
	adj	opp	hyp	$\frac{\text{adj}}{\text{hyp}}$	$\frac{\text{opp}}{\text{hyp}}$	$\frac{\text{opp}}{\text{adj}}$
60	CB	AB	AC			
	1	$\sqrt{3}$	2	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{1}$

Trigonometric definitions:

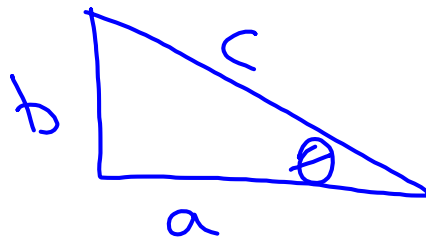
- cosine = $\frac{\text{adj}}{\text{hyp}}$
- sine = $\frac{\text{opp}}{\text{hyp}}$
- tangent = $\frac{\text{opp}}{\text{adj}}$



Sine $\sin 45 = \frac{1}{\sqrt{2}}$

Cosine $\cos 45 = \frac{1}{\sqrt{2}}$

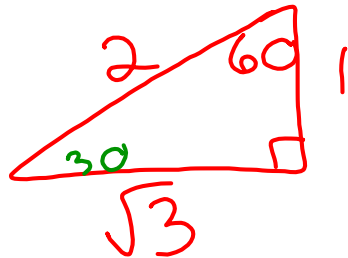
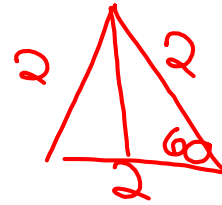
tangent = $\tan 45 = \frac{1}{1} = 1$



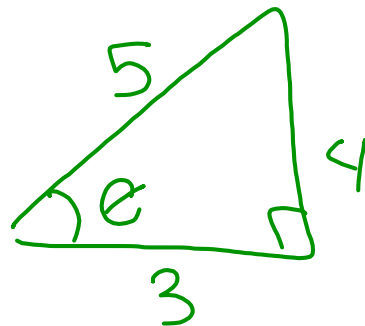
$\sin \theta = \frac{b}{c}$ $\cos \theta = \frac{a}{c}$

$\tan \theta = \frac{b}{a}$

$$\sin 60 = \frac{\sqrt{3}}{2}$$

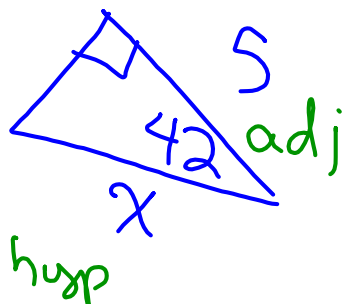


$$\tan 30 = \frac{1}{\sqrt{3}}$$



$$\sin \theta = \frac{4}{5} \quad \cos \theta = \frac{3}{5}$$

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



$$\cos 42 = \frac{5}{x}$$

