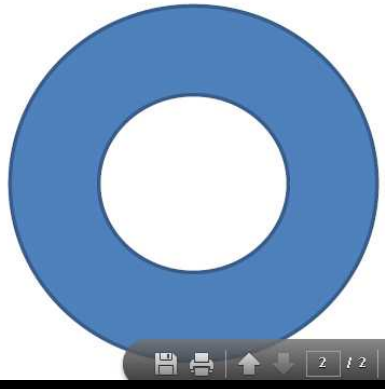
8. Maria designs a game for the school's carnival. Students will throw a dart at the circles shown. If the dart lands in the shaded area, the student wins a prize. The radius of the larger circle is 12 inches and the radius of the smaller circle is 6 inches. What is the probability that a student will win a prize? Show your work or provide an explanation.



$\text{area of shaded region} = \pi \cdot 12^2 - \pi \cdot 6^2$

$= 144\pi - 36\pi$

$= 108\pi$

$P(\text{landing in shaded region}) = \frac{108\pi}{144\pi}$

$= 0.75$

75%

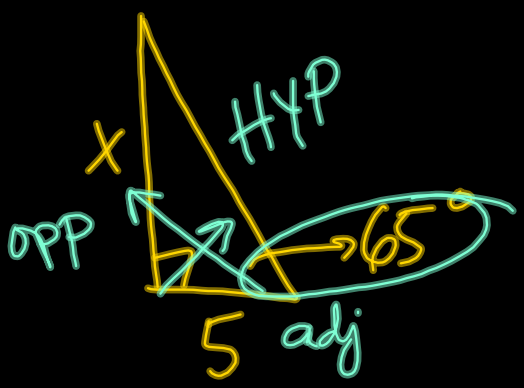
1+1
1+2
1+3
1+4

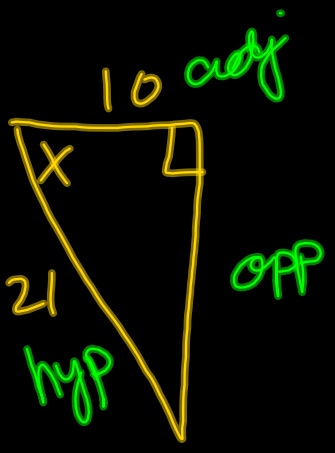
2+6
2+5
1+6
1+7
3+4
3+5

Prob (7 or 8 sum)

Total # of outcomes
$3 \cdot 8 = 24$

$\frac{6}{24} = \frac{1}{4}$



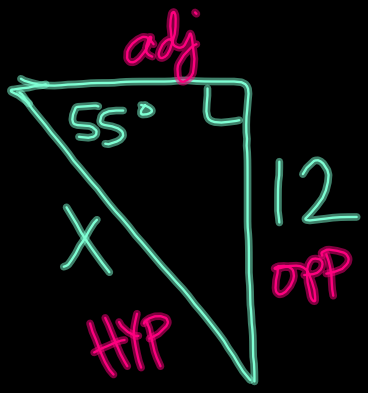


$$\frac{\tan 65}{1} = \frac{x}{5}$$

$$x = 5\tan 65°$$

$$x = 11.5°$$

$$\cos x = \frac{10}{21}$$



$$\frac{\sin 55°}{1} = \frac{12}{x}$$

$$x = \frac{12}{\sin 55°}$$

$$x = 14.6$$