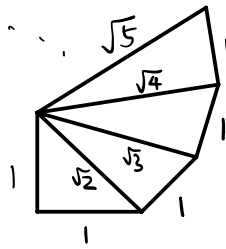
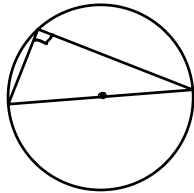


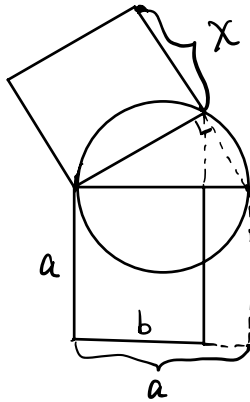
2.5.4.
2.5.5



2.7.1

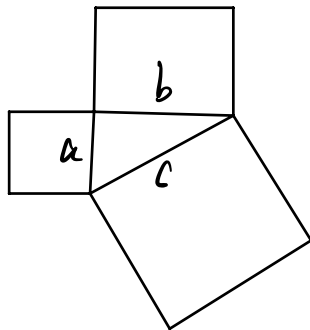


2.7.2



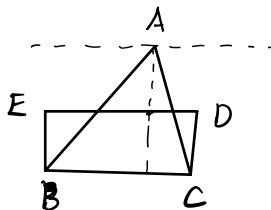
$$x^2 = a \cdot b$$

2.7.3



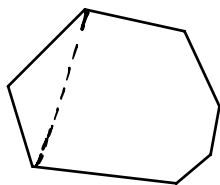
$$a^2 + b^2 = c^2 \quad \text{Pythagorean Thm.}$$

2.7.4 First we can square a triangle:



$$|\Delta_{ABC}| = |\square_{BCDE}| = |\square|$$

↑
by 2.7.2



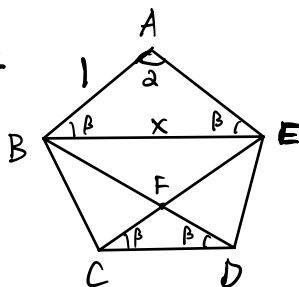
use induction: $n=3 \checkmark$, $n=4 \checkmark$

Assume we can square m -polygon for $m \leq n$.

$$\begin{aligned} \text{Then } |(n+1)\text{-polygon}| &= |\underset{\downarrow n=3}{\text{triangle}}| + |\underset{\downarrow \text{induction}}{(n-2)\text{-polygon}}| \\ &= |\text{square}_1| + |\text{square}_2| \\ &= |\text{square}_3| \quad \text{by 2.7.3} \end{aligned}$$



2.8.1-2.8.2



$$\begin{aligned} \Delta ABE &\sim \Delta FCD \\ \Rightarrow \frac{|AB|}{|BE|} &= \frac{|FC|}{|CD|} \\ \parallel & \\ \frac{1}{x} &= \frac{x-1}{1} \end{aligned}$$

$$\Rightarrow x^2 - x - 1 = 0$$

$$\Rightarrow x = \frac{1 + \sqrt{1+4}}{2} = \frac{1 + \sqrt{5}}{2}$$

2.8.3

Construction:

