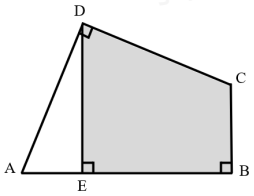
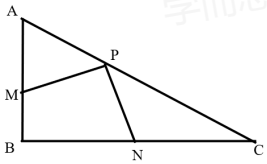
2025 July AMC 10 Week 1 Day 3 - "K" Model

1 （1分）The area of quadrilateral $ABCD$ is 25. It is known that $AD = DC$, $DE = BE$, and $AE = 2$. What is the area of the shaded part?



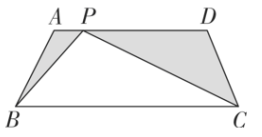
A. 15　　B. 18　　C. 19　　D. 20　　E. 22

2 （1分）In right triangle ABC, $AP = 2$, $PC = 3$, $m\angle C = 30°$, $m\angle B = 90°$, and $\overline{PM} \perp \overline{PN}$. What is the ratio $\overline{PM} : \overline{PN}$?



A. $\frac{2}{3}$
B. 1
C. $\frac{\sqrt{3}}{3}$
D. $\frac{4}{3}$
E. $\frac{2}{3}\sqrt{3}$

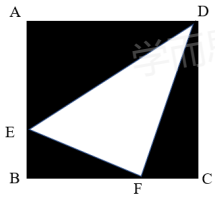
3 （1分）As shown in the figure, in trapezoid $ABCD$, $\overline{AD} \parallel \overline{BC}$, $AD < BC$, $AD = 5$, $AB = DC = 2$, and P is a point on $\overline{AD}$ such that $m\angle BPC = m\angle A$.What is the length of AP?



A. 1　　B. 2　　C. 4　　D. 1 or 4

E. 2 or 4

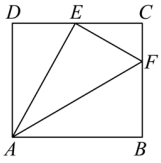
4 （1分）As shown in the figure, $ABCD$ is a square. Given $EF = 3$, $DF = 4$, and $DE = 5$, what is the area of the shaded region?



A. 6 B. $\frac{149}{17}$ C. $\frac{154}{17}$ D. 14

E. $\frac{256}{17}$

5 （1分）As shown in the figure, in rectangle $ABCD$, $AB = 6$. Point B is folded to point E on side CD along crease AF, and AE and EF are connected. If E is the midpoint of CD, what is the length of CF?



A. 1 B. $\sqrt{3}$ C. 2 D. $\sqrt{5}$ E. 3