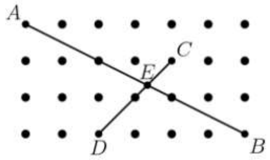
Hybleland L9-Lesson 08 Similar Triangle III-Assignment

Practice 1.

AMC10 2000 / Problem 16

The diagram show 28 lattice points, each one unit from its nearest neighbors. Segment AB meets segment CD at E. Find the length of segment AE.



A. $\frac{4\sqrt{5}}{3}$ B. $\frac{5\sqrt{5}}{3}$ C. $\frac{12\sqrt{5}}{7}$ D. $2\sqrt{5}$ E. $\frac{5\sqrt{65}}{9}$

Practice 2.

AMC10B 2017 / Problem 15

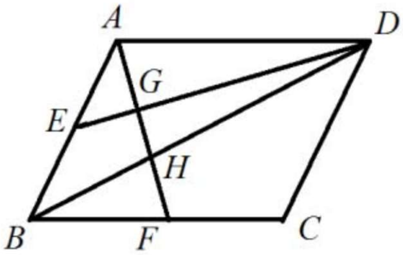
Rectangle $ABCD$ has $AB=3$ and $BC=4$. Point E is the foot of the perpendicular from B to diagonal $\overline{AC}$. What is the area of $\triangle ADE$?

A. 1 B. $\frac{42}{25}$ C. $\frac{28}{15}$ D. 2 E. $\frac{54}{25}$

Practice 3.

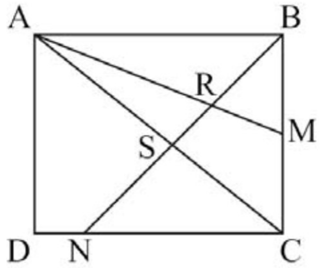
In parallelogram ABDC, shown here, points E and F are the midpoints of side AB and BC, respectively. AF meets DE at G and BD at H. Find the area of quadrilateral BHGE if the area of ABCD is 60.

$(A)10$ $(B)9$ $(C)8$ $(D)7$ $(E)5$



Practice 4. (Mathcounts)

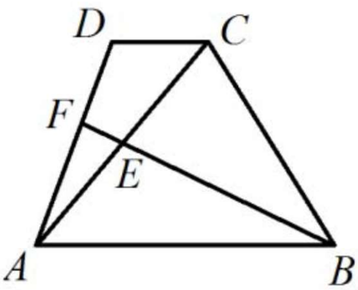
In rectangle ABCD, shown here, point M is the midpoint of side BC, and point N lies on CD such that DN:NC=1:4. Segment BN intersects AM and AC at points R and S, respectively. If NS:SR:RB=x:y:z, where x, y and z are positive integers, what is the minimum possible value of x+y+z?



Practice 5.

In trapezoid ABCD, AB=3CD and AB // CD. E is the midpoint of the diagonal AC. BE meets AD at F. Find the value of AF:FD.

$(A)\frac{5}{3}$ $(B)\frac{3}{2}$ $(C)\frac{10}{7}$ $(D)\frac{11}{6}$ $(E)\frac{12}{5}$

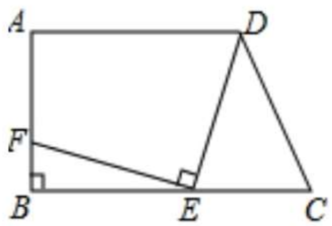


Practice 6.

As is shown in figure below, in trapezoid ABCD, AD // BC, $\angle B=90°$, AB=7, AD=9, BC=12. E is a random point on BC. Connect DE and make $EF \perp DE$, it intersects with AB at point F.

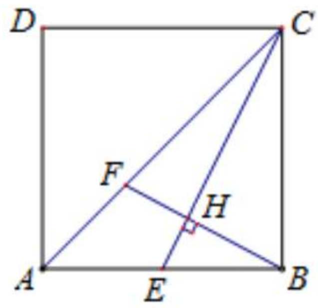
(1) If point F coincides with point B, find the length of CE.

(2) If point F is on segment AB, and AF=CE, find the length of CE.



Practice 7.

Square ABCD has a side length of 1 and E is the midpoint of AB. Connect CE, B is on the line where BF⊥CE and it intersects with AC at point F. Find the length of AF.



Practice 8.

As is shown in the figure below, in Rt△ABC , CD is the attitude of hypotenuse AB. The angle bisector of ∠BAC intersects with BC and CD respectively at points E and F.

(1) Prove: CF=CE

(2) Prove: $\frac{CE}{BE}=\frac{AC}{AB}$