

The Weekly Rigor

No. 129

“A mathematician is a machine for turning coffee into theorems.”

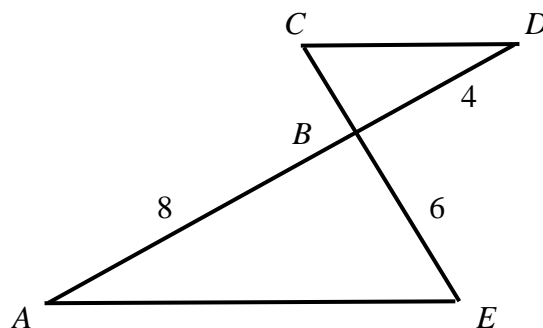
December 10, 2016

SAT Math Test Problem Children: Geometry

(Part 3)

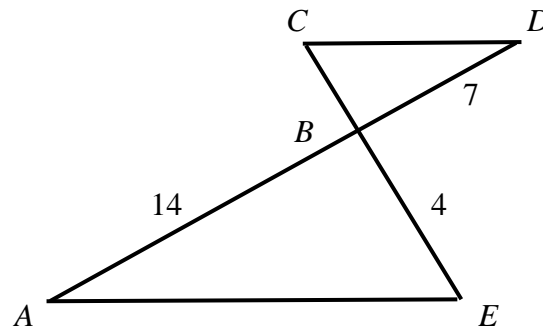
PROBLEMS

1. In triangle ABC , the measure of $\angle B$ is 90° , $BC = 9$, and $AC = 15$. Triangle DEF is similar to triangle ABC , where vertices D , E , and F correspond to vertices A , B , and C , respectively, and each side of triangle DEF is $\frac{1}{3}$ the length of the corresponding side of triangle ABC . What is the value of $\sin F$?
2. In triangle ABC , the measure of $\angle B$ is 90° , $BC = 15$, and $AC = 25$. Triangle DEF is similar to triangle ABC , where vertices D , E , and F correspond to vertices A , B , and C , respectively, and each side of triangle DEF is $\frac{1}{5}$ the length of the corresponding side of triangle ABC . What is the value of $\sin F$?
3. In triangle ABC , the measure of $\angle B$ is 90° , $BC = 16$, and $AC = 20$. Triangle DEF is similar to triangle ABC , where vertices D , E , and F correspond to vertices A , B , and C , respectively, and each side of triangle DEF is $\frac{1}{4}$ the length of the corresponding side of triangle ABC . What is the value of $\sin F$?
- 4.



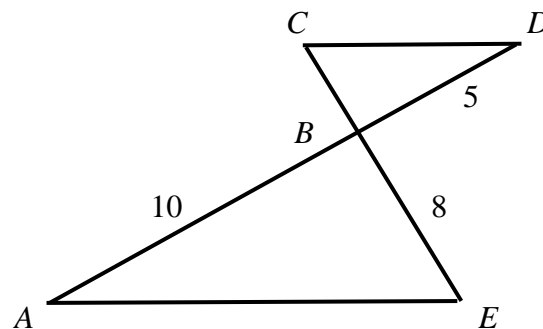
In the figure above, $\overline{AE} \parallel \overline{CD}$ and segment AD intersects segment CE at B . What is the length of segment CE ?

5.



In the figure above, $\overline{AE} \parallel \overline{CD}$ and segment AD intersects segment CE at B . What is the length of segment CE ?

6.



In the figure above, $\overline{AE} \parallel \overline{CD}$ and segment AD intersects segment CE at B . What is the length of segment CE ?

“Only he who never plays, never loses.”