

GEOMETRY WORD PROBLEMS

2012B

21. Four distinct points are arranged in a plane so that the segments connecting them have lengths a , a , a , a , $2a$, and b . What is the ratio of b to a ?

- (A) $\sqrt{3}$ (B) 2 (C) $\sqrt{5}$ (D) 3 (E) π

- 2016B 23. In regular hexagon $ABCDEF$, points W , X , Y , and Z are chosen on sides \overline{BC} , \overline{CD} , \overline{EF} , and \overline{FA} , respectively, so that lines AB , ZW , YX , and ED are parallel and equally spaced. What is the ratio of the area of hexagon $WCXYFZ$ to the area of hexagon $ABCDEF$?
- (A) $\frac{1}{3}$ (B) $\frac{10}{27}$ (C) $\frac{11}{27}$ (D) $\frac{4}{9}$ (E) $\frac{13}{27}$
- 2005A 25. In $\triangle ABC$ we have $AB = 25$, $BC = 39$, and $AC = 42$. Points D and E are on \overline{AB} and \overline{AC} respectively, with $AD = 19$ and $AE = 14$. What is the ratio of the area of triangle ADE to the area of the quadrilateral $BCED$?
- (A) $\frac{266}{1521}$ (B) $\frac{19}{75}$ (C) $\frac{1}{3}$ (D) $\frac{19}{56}$ (E) 1