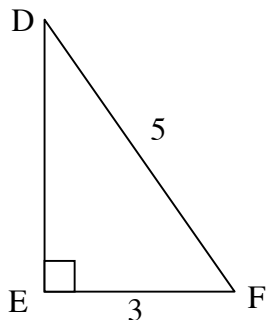


Instructions

Each team member receives a problem to work. The first team member gets an answer sheet. The first person works his/her problem, writes the answer only on the answer sheet, and passes the answer sheet only back to the second person. The second student uses the answer to work his/her problem, writes the answer only on the answer sheet, and passes the answer sheet only back to the third person, etc. After the fourth person gets the fourth answer and writes it down on the answer sheet, he/she takes the answer sheet to the proctor in the hall. The first team to get the correct answers wins.

Team Relay 2005

Part 1: The area of $\triangle DEF$ is x square units. The perimeter of $\triangle DEF$ is y units. If $A = x + y$, find the numerical value of A .



Part 2: The line which contains the points $(-3, A)$ and $(1, -2)$ has y -intercept B . Find B .

Part 3: Find C when $\frac{(x^B)^3 \cdot x^{(2B+1)}}{x^{B-1}} = x^C$.

Part 4: If $\tan \theta = \frac{C}{7}$, and $0^\circ < \theta < 90^\circ$, find the exact value of D where $\sec \theta = D$.

Answers: $A = 18$, $B = 3$, $C = 14$, $D = \frac{\sqrt{5}}{2}$