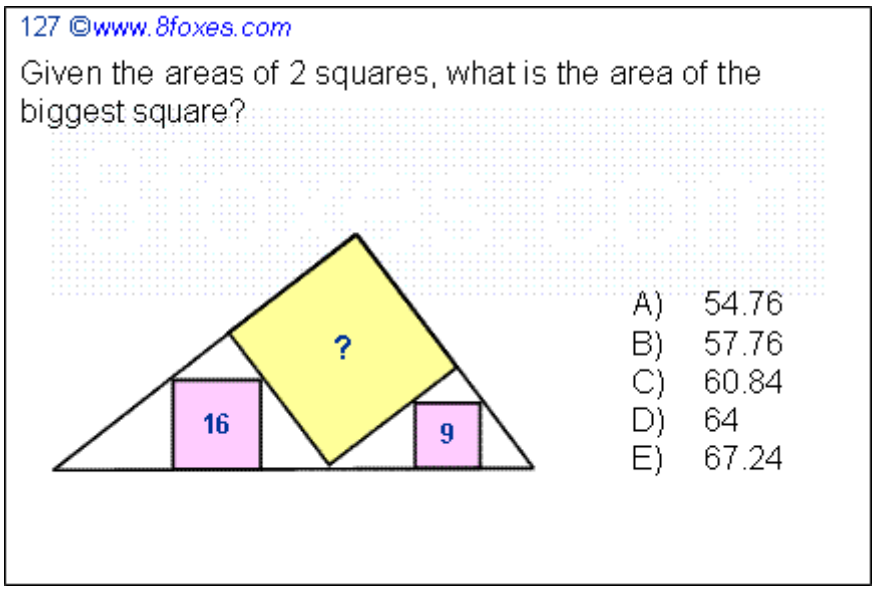
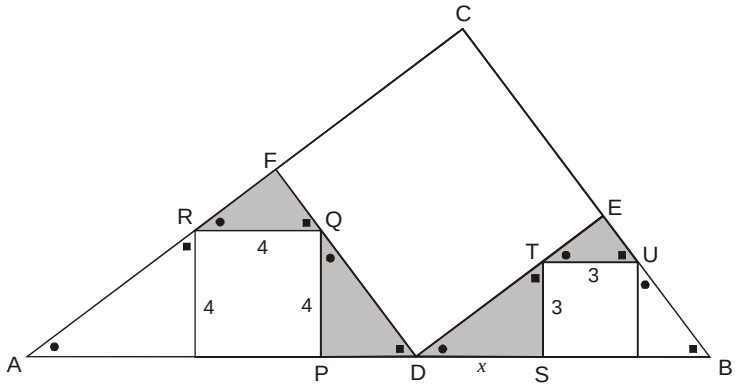
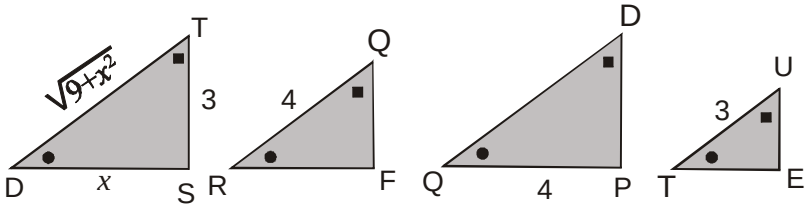
SOLUTION



First we give names:
The big triangle is ABC with the right angle at C. The big square is $CEDF$, with D on AB, E on BC and F on AC.
P, Q and R are vertices of the left 4x4-square, with P on AD, Q on DF and R on AF.
S, T and U are vertices on the right 3x3-square, with S on BD, T on DE and U on BE.
$SD = x$.



The triangles DST, FRQ, PQD and ETU are similar right-angled triangles:



- With Pythagoras: $TD = \sqrt{9+x^2}$
- $FQ = \frac{4}{\sqrt{9+x^2}} \cdot 3 = \frac{12}{\sqrt{9+x^2}}$
- $QD = \frac{4}{x} \cdot \sqrt{9+x^2}$
- $TE = \frac{3}{\sqrt{9+x^2}} \cdot x = \frac{3x}{\sqrt{9+x^2}}$

$$DE = DT + TE = \sqrt{9+x^2} + \frac{3x}{\sqrt{9+x^2}}$$

$$DF = QD + FQ = \frac{4}{x}\sqrt{9+x^2} + \frac{12}{\sqrt{9+x^2}} = \frac{4}{x} \cdot \left(\sqrt{9+x^2} + \frac{3x}{\sqrt{9+x^2}} \right) = \frac{4}{x} \cdot DE$$

But $CEFD$ is a square, so $DE = DF$.
This means $^4/_x = 1$, or $x = 4$.

$$DE = DF = \; DE = DF = \sqrt{9+4^2} + \frac{3 \cdot 4}{\sqrt{9+4^2}} = 5 + \frac{12}{5} = \frac{37}{5}$$

The area of the biggest square $CEFD$ is equal to $\left(\frac{37}{5}\right)^2 = \frac{1369}{25} = 54\frac{19}{25} = 54,76$

- The answer is **A**