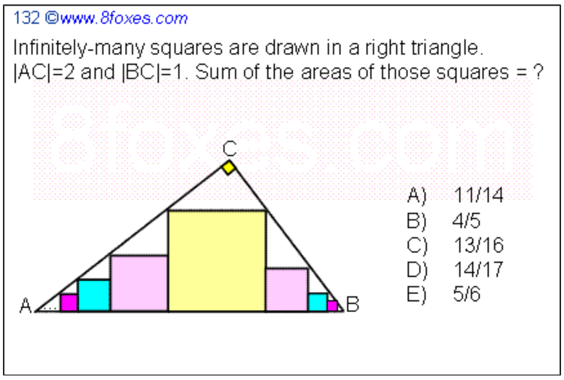
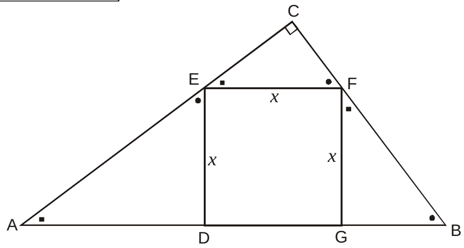
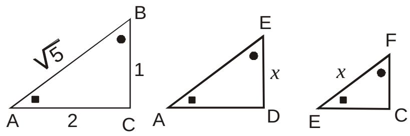
SOLUTION



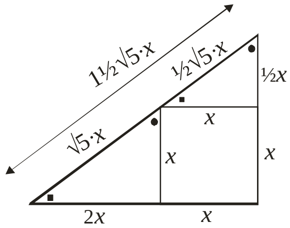
We watch the biggest square in the middle, see figure:



- Triangles ADE, ECF and ABC are similar, so
  $EC = 2\cdot\frac{x}{\sqrt{5}} = \frac{2}{5}\sqrt{5}\cdot x$ and $AE = x\cdot\sqrt{5}$
- $AE + EC = AC = 2$, so $\frac{2}{5}\sqrt{5}\cdot x + \sqrt{5}\cdot x = \frac{7}{5}\sqrt{5}\cdot x = 2$
  $\rightarrow\ x = \frac{2}{7}\sqrt{5}$ and area $DEFG = x^2 = {}^{20}/_{49}$.
- $EC = \frac{4}{7}$; $AE = 2 - \frac{4}{7} = \frac{10}{7}$
- $CF = \frac{2}{7}$; $BF = 1 - \frac{2}{7} = \frac{5}{7}$



Now we watch any right-angled triangle similar to ABC, with a square in the right angle.
When the square has sides x, then it's easy to see that the two remaining triangles are similar with the original triangle, one with factor ${}^2/_3$ and the other with factor ${}^1/_3$. See figure.



And it follows that de side $x = \frac{\text{hypothenusa}}{1\frac{1}{2}\sqrt{5}} = \frac{2}{3\sqrt{5}}\cdot\text{hypothenusa}$.

Now we distinguish between the left and right side of the figure:

- Right side:
  In every step the triangle gets smaller with factor ${}^1/_3$, so also every square gets smaller with factor ${}^1/_3$. The first square has side $x_0 = \frac{2}{3\sqrt{5}}\cdot BF = \frac{2}{3\sqrt{5}}\cdot\frac{5}{7} = \frac{2\sqrt{5}}{21}$ and area $\left(x_0\right)^2 = \frac{20}{441}$.
  The sides of the squares on the right side give the following geometric sequence:
  $\frac{2\sqrt{5}}{21},\ \frac{2\sqrt{5}}{21}\cdot\frac{1}{3},\ \frac{2\sqrt{5}}{21}\cdot\left(\frac{1}{3}\right)^2,\ \frac{2\sqrt{5}}{21}\cdot\left(\frac{1}{3}\right)^3,\ \ldots$, or $x_n = \frac{2\sqrt{5}}{21}\cdot\left(\frac{1}{3}\right)^n$ $(n = 0, 1, 2, \ldots)$
  The area of these squares are $(x_n)^2 = \frac{20}{441}\cdot\left(\frac{1}{3}\right)^{2n} = \frac{20}{441}\cdot\left(\frac{1}{9}\right)^n$ $(n = 0, 1, 2, \ldots)$.
  The *total area of the squares on the right side* is equal to
  $$\sum_{n=0}^{\infty}\left(x_n\right)^2 = \sum_{n=0}^{\infty}\frac{20}{441}\cdot\left(\frac{1}{9}\right)^n = \frac{20}{441}\cdot\sum_{n=0}^{\infty}\left(\frac{1}{9}\right)^n = \frac{20}{441}\cdot\frac{1}{1-\frac{1}{9}} = \frac{20}{441}\cdot\frac{9}{8} = \frac{5}{98}$$
- Left side:
  In every step the triangle, and also the square, is multiplied with factor ${}^2/_3$.
  The first square has side $y_0 = \frac{2}{3\sqrt{5}}\cdot AE = \frac{2}{3\sqrt{5}}\cdot\frac{10}{7} = \frac{4\sqrt{5}}{21}$ and area $\left(y_0\right)^2 = \frac{80}{441}$.
  The sides of the squares on the left side give the following geometric sequence:
  $\frac{4\sqrt{5}}{21},\ \frac{4\sqrt{5}}{21}\cdot\frac{2}{3},\ \frac{4\sqrt{5}}{21}\cdot\left(\frac{2}{3}\right)^2,\ \frac{4\sqrt{5}}{21}\cdot\left(\frac{2}{3}\right)^3,\ \ldots$, or $y_n = \frac{4\sqrt{5}}{21}\cdot\left(\frac{2}{3}\right)^n$ $(n = 0, 1, 2, \ldots)$
  The *total area of the squares on the left side* is equal to
  $$\sum_{n=0}^{\infty}\left(y_n\right)^2 = \sum_{n=0}^{\infty}\frac{80}{441}\cdot\left(\frac{4}{9}\right)^n = \frac{80}{441}\cdot\sum_{n=0}^{\infty}\left(\frac{4}{9}\right)^n = \frac{80}{441}\cdot\frac{1}{1-\frac{4}{9}} = \frac{80}{441}\cdot\frac{9}{5} = \frac{16}{49}$$
- The total sum of the areas of all squares = $\frac{20}{49} + \frac{16}{49} + \frac{5}{98} = \frac{40}{98} + \frac{32}{98} + \frac{5}{98} = \frac{77}{98} = \frac{11}{14}$
- The answer is **A**