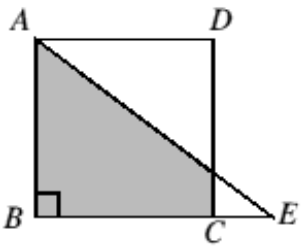
6. The diagram shows a square $ABCD$ and a right-angled triangle ABE. The length of BC is 3. The length of BE is 4.

What is the area of the shaded region?

A $5\frac{1}{4}$ B $5\frac{3}{8}$ C $5\frac{1}{2}$ D $5\frac{5}{8}$ E $5\frac{3}{4}$



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6. **D** Let F be the point of intersection of the lines AE and CD. Let the length of CF be h. Then, using similar triangles, $\frac{CF}{CE} = \frac{BA}{BE}$, so $\frac{h}{1} = \frac{3}{4}$ giving $h = \frac{3}{4}$. The shaded region $ABCF$ is a trapezium, so has area $\frac{1}{2}\left(3 + \frac{3}{4}\right) \times 3 = \frac{45}{8}$ which is $5\frac{5}{8}$.