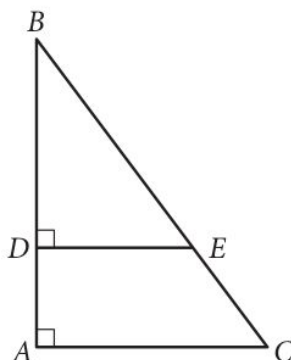


Trigonometry (Section 4)

On the SAT, questions involving Trigonometry are minimal, but are easy points. Test-takers must be able to identify common pythagorean triples, and understand basic trigonometric identities.

Let's take a look at a sample problem below.

Problem:



In the figure above, $\tan B = \frac{3}{4}$. If $BC = 15$ and

$DA = 4$, what is the length of \overline{DE} ?

Since we know that $\tan B = \frac{3}{4}$, we can realize that $\triangle ABC$ and $\triangle DBE$ are both 3-4-5 triangles. This means that they are both similar to the right triangle with sides of lengths 3, 4, and 5. Since $BC = 15$, which is 3 times as long as the hypotenuse of the 3-4-5 triangle, the similarity ratio of $\triangle ABC$ to the 3-4-5 triangle is 3:1.

Therefore, the length of AC would be $3 \times 3 = 9$, and the length of AB is $4 \times 3 = 12$. Since we also know that the length of DA is 4, the length of BD would be $12 - 4 = 8$.

This shows that $\triangle DBE$ has a similarity ratio of 2:1 to the 3-4-5 triangle. So, we can find the length of $DE = 3 \times 2 = 6$.