



$$\angle COE = \angle BOE$$

$$14 + x = 9 \rightarrow \sqrt{10} = BC \rightarrow \frac{2\sqrt{10}}{2} = \sqrt{10} = EC = BE$$

$$\sqrt{1+x^2}$$

$$\sqrt{1+x^2} = 14 - x$$

$$14 + x = 14 + 9 - 14x \rightarrow 14x = 19$$

$$x = \frac{19}{14}$$

$$\frac{1}{2} \times AC \times CD = \frac{1}{2} \times 10 \times 14 = 70$$

$$ABE = 10 - 70 = 60$$

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$$AB^2 = AC^2 + BC^2 = 14^2 + 9^2 = 196 + 81 = 277$$

$$AB = \sqrt{277}, \quad BD = \frac{BC}{AB} = \frac{9}{\sqrt{277}} = \frac{11}{\sqrt{10}} = \frac{11}{10} \rightarrow \cos B = \frac{BC}{AB} = \frac{BE}{BD}$$

$$BE = \frac{9 \times \frac{11}{10}}{\frac{11}{10}} = \frac{9 \times 11}{10} = \frac{99}{10} = 9.9$$

$$AC = \sqrt{9^2 + 14^2} = \sqrt{277}$$

$$14^2 = AH \times 10 \Rightarrow 196 = AH \times 10 \rightarrow AH = 19.6$$

$$AE = \frac{AH}{14} = \frac{19.6}{14} = 1.4 \rightarrow \frac{DE}{BC} = \frac{AE}{AB} \Rightarrow \frac{DE}{14} = \frac{1.4}{14} \rightarrow DE = 1.4$$

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