

To receive full credit, please show all of your work.

Given: \overrightarrow{ES} and \overrightarrow{EL} are trisectors of $\angle DEI$

\overrightarrow{EI} is a bisector of $\angle VES$

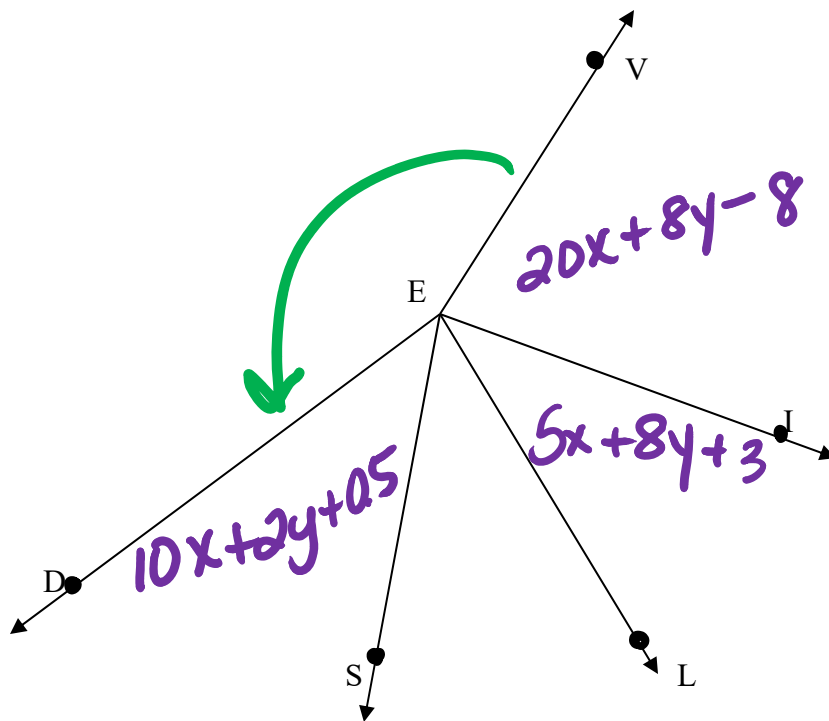
$$\angle DES = (10x + 2y + 0.5)^\circ$$

$$\angle IEL = (5x + 8y + 3)^\circ$$

$$\angle VEI = (20x + 8y - 8)^\circ$$

Find: $\angle VED$

175°



$$10x + 2y + 0.5 = 5x + 8y + 3$$

$$5x - 6y = 2.5$$

$$20x + 8y - 8 = 10x + 16y + 6$$

$$10x - 8y = 14$$

$$(5x - 6y = 2.5) \cdot -2$$

$$10x - 8y = 14$$

$$-10x + 12y = -5$$

$$4y = 9$$

$$y = \frac{9}{4} = 2.25$$

$$x = 3.2$$