

Answer on Question #65436, Math / Calculus.

We find the equation of the two beams of the angle:

$$\frac{x-2}{10-2} = \frac{y-3}{9-3},$$

$$\frac{x-2}{8} = \frac{y-3}{6},$$

$$6x - 12 - 8y + 24 = 0,$$

$$6x - 8y + 12 = 0,$$

$$\frac{x-3}{10-3} = \frac{y-15}{9-15},$$

$$\frac{x-3}{7} = \frac{y-15}{-6},$$

$$-6x + 18 - 7y + 105 = 0,$$

$$-6x - 7y + 123 = 0,$$

$$6x + 7y - 123 = 0.$$

Then the equation of bisecting is:

$$\frac{6x - 8y + 12}{\sqrt{6^2 + (-8)^2}} = \frac{6x + 7y - 123}{\sqrt{6^2 + 7^2}},$$

$$\frac{6x - 8y + 12}{10} = \frac{6x + 7y - 123}{\sqrt{85}},$$

$$x(6\sqrt{85} - 6 \cdot 10) - y(8\sqrt{85} + 7 \cdot 10) + 12\sqrt{85} + 123 \cdot 10 = 0.$$

Then the slope of the line bisecting:

$$\tan \alpha = k = \frac{6\sqrt{85} - 6 \cdot 10}{8\sqrt{85} + 7 \cdot 10} = \frac{6\sqrt{85} - 60}{8\sqrt{85} + 70} \approx \frac{6 \cdot 9.22 - 60}{8 \cdot 9.22 + 70} = \frac{-4.68}{143.76} \approx -0.0326.$$