$$p = ro + t imes rd \ |p - so| = sr$$

$$(ro+t imes rd) imes (ro+t imes rd)=sr^2$$

$$ro^2 + t^2 imes rd^2 + 2 imes ro imes rd imes t = sr^2$$

$$t^2 imes rd^2 + 2 imes ro imes rd imes t + ro^2 - sr^2 = 0$$

$$t = \frac{^{-2 \times ro \times rd + \sqrt{4 \times ro^2 \times rd^2 - 4 \times rd^2 \times (ro^2 - sr^2)}}}{2 \times rd^2}$$

$$t=rac{-|ro|+sr}{|rd|}$$

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