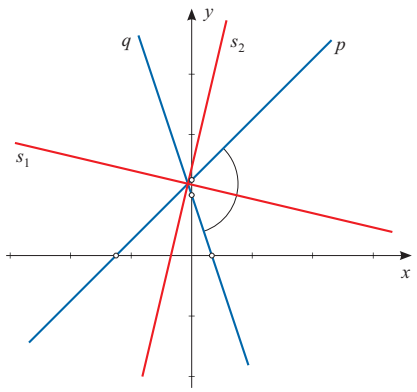
Zadatak 21. Odredi simetralu onog kuta što ga zatvaraju pravci $4x - 4y + 5 = 0$ i $7x + y - 1 = 0$, kojem ne pripada ishodište koordinatnog sustava.

Rješenje.

$$p \ \ldots \ 4x - 4y + 5 = 0 \implies y = x + \frac{5}{4}$$
$$q \ \ldots \ 7x + y - 1 = 0 \implies y = -7x + 1$$

$p \ \ldots \ (0, \frac{5}{4}), \ (-\frac{5}{2}, 0)$
$q \ \ldots \ (0, 1), \ (\frac{1}{7}, 0)$



Za točku T na simetrali kuta vrijedi:

$$d(T,p) = d(T,q)$$
$$\frac{|4x - 4y + 5|}{\sqrt{16 + 16}} = \frac{|7x + y - 1|}{\sqrt{49 + 1}}$$
$$\frac{|4x - 4y + 5|}{4\sqrt{2}} = \frac{|7x + y - 1|}{5\sqrt{2}} \quad / \cdot 20\sqrt{2}$$
$$5|4x - 4y + 5| = 4|7x + y - 1|$$
$$|20x - 20y + 25| = |28x + 4y - 4|$$

1) $20x - 20y + 25 = 28x + 4y - 4$
$8x + 24y - 29 = 0 \ \ldots \ s_1$

2) $20x - 20y + 25 = -28x - 4y + 4$
$48x - 16y + 21 = 0 \ \ldots \ s_2$

Iz slike se vidi da je rješenje $8x + 24y - 29 = 0$.