DevAnoop.Me

4(iii) $-3x+5y=7$, $2px-3y=1$

$\frac{a_1}{a_2}=\frac{-3}{2p}$, $\frac{b_1}{b_2}=\frac{5}{-3}$, $\frac{c_1}{c_2}=\frac{7}{1}$

For lines intersecting at a unique point

$\frac{a_1}{a_2}\neq\frac{b_1}{b_2}$

$\frac{-3}{2p}\neq\frac{5}{-3}$

$\Rightarrow 10p\neq 9$

$\Rightarrow p\neq\frac{9}{10}$

all real values except $\frac{9}{10}$

4(iv) $2x+3y-5=0$, $2px+py=28-qy$

$\Rightarrow 2px+y(p+q)-28=0$

$\frac{a_1}{a_2}=\frac{1}{2p}=\frac{1}{p}$, $\frac{b_1}{b_2}=\frac{3}{p+q}$, $\frac{c_1}{c_2}=\frac{-5}{-28}=\frac{5}{28}$

given pair of eqns has en. Many sols

$\therefore \frac{a_1}{a_2}=\frac{b_1}{b_2}=\frac{c_1}{c_2}$

$\frac{1}{p}=\frac{3}{p+q}=\frac{5}{28}$

$\frac{1}{p}=\frac{5}{28}$ | $\frac{3}{p+q}=\frac{5}{28}$ | $\Rightarrow q=\frac{56}{5}$

$\Rightarrow p=\frac{28}{5}$ | $5(p+q)=84$ | $\therefore p=\frac{28}{5}, q=\frac{56}{5}$

$5(\frac{28}{5}+q)=84$

$\Rightarrow 28+5q=84$

$\Rightarrow 5q=56$