(5)

$$x^2-4x+8-k$$
$$x^2-2x+k \;\overline{)\; x^4-6x^3+16x^2-25x+10}$$
$$x^4-2x^3+kx^2$$
$$-4x^3+x^2(16-k)-25x+10$$
$$-4x^3+8x^2-4kx$$
$$x^2(8-k)+x(4k-25)+10$$
$$x^2(8-k)-2x(8-k)+k^2+8k$$
$$x(4k-25+16-2k)+k^2+10-8k$$
$$= x(2k-9)+k^2+10+8k$$

given remainder $= x+a$

$\therefore x+a = x(2k-9)+k^2+10-8k$

comp. coeff. of x on both sides

$1 = 2k-9$

$\Rightarrow 2k = 10$

$\Rightarrow k = 5$

comp. constants on both sides

$a = k^2+10-8k$

$a = 5^2+10-8\times5$

$\Rightarrow a = 35-40$

$\Rightarrow a = -5$

$\therefore a=-5,\ k=5$