

EMA:

$$x_n = \frac{2}{prd_n + 1}$$

$$EMA_{prd_n}[1] = data[1]$$

$$EMA_{prd_n}[n + 1] = (data[n + 1] * x_n) + (EMA_{prd_n}[n] * (1 - x_n))$$

if two EMA are equal where $data[n + 1]$ is unknown, then:

$$EMA_{prd_1}[n + 1] = EMA_{prd_2}[n + 1]$$

$$(data[n + 1] * x_1) + (EMA_{prd_1}[n] * (1 - x_1)) = (data[n + 1] * x_2) + (EMA_{prd_2}[n] * (1 - x_2))$$

$$(data[n + 1] * x_1) - (data[n + 1] * x_2) = (EMA_{prd_2}[n] * (1 - x_2)) - (EMA_{prd_1}[n] * (1 - x_1))$$

$$(x_1 - x_2)data[n + 1] = (EMA_{prd_2}[n] * (1 - x_2)) - (EMA_{prd_1}[n] * (1 - x_1))$$

$$data[n + 1] = \frac{(EMA_{prd_2}[n] * (1 - x_2)) - (EMA_{prd_1}[n] * (1 - x_1))}{(x_1 - x_2)}$$

or in MetaStock terms:

prd1:=5;

prd2:=20;

data:=CLOSE;

x1:=2/(prd1+1);

x2:=2/(prd2+1);

ma1:=ref(mov(data,prd1,e),-1);

ma2:=ref(mov(data,prd2,e),-1);

((ma2*(1-x2))-(ma1*(1-x1)))/(x1-x2);