Temperature conversion

Read this carefully and practice with the questions at the bottom of the page

Degrees Celsius $^{\circ}C = 5/9(^{\circ}F - 32)$

Degrees Fahrenheit $^{\circ}F = 9/5(^{\circ}C) + 32 = 1.8\ (^{\circ}C) + 32$

Temperature differences:

The Boiling Point Rise is the difference between the boiling point of the pure solvent and the boiling point of the solution.

Example: Temperature of pure solvent is θ_1 ; Temperature of solution is θ_2
$\theta_{1F} = 212^{o}F$; $\theta_{2F} = 221^{o}F$

Convert to ^{o}C: $\theta_{1C} = 5/9(212-32) = 100\ ^{o}C$; $\theta_{2C} = 5/9(221-32) = 105^{o}C$.

BPR $^{o}F = (\theta_{2F} - \theta_{1F}) = 221 - 212 = 9\ ^{o}F$ BPR $^{o}C = (\theta_{2C} - \theta_{1C}) = 105 - 100 = 5^{o}C$

Check: BPR, Fahrenheit $\theta_{2F} - \theta_{1F} = 221-212 = 9^{o}F$

BPR, Celsius $\theta_{2C} - \theta_{1C} = 5/9(221-32) - 5/9(212 - 32) = 5/9(221) - 5/9(32) - 5/9(212) + 5/9(32) = 5/9(221- 212) = 5^{o}C$

BPR $^{o}C = 5/9$ (BPR ^{o}F) BPR $^{o}F = 9/5$ (BPR ^{o}C) $= 1.8$ (BPR ^{o}C)

Question 1.	Convert 239 ^{o}F to ^{o}C .	(Answer: 115 ^{o}C)
Question 2.	Convert 120 ^{o}C to ^{o}F	(Answer: 248 ^{o}F)
Question 3.	BPR is 13 ^{o}F ; calculate BPR in ^{o}C.	(Answer: 7.2 ^{o}C)
Question 4.	BPR is 6 ^{o}C ; calculate BPR in ^{o}F.	(Answer: 10.8 ^{o}F)