

INHERITANCE IN ISLAM

An attempt to simplify one of the complex branches of Shari'ah



MUHAMMAD IMRAN MUHAMMAD

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My sincere appreciation goes to my teacher, Sheikh Musa Alhaji Baba from whom I learnt a lot. This book is a manifestation of just one of the things he taught me. I did not only learn the theoretical aspect of inheritance, but I had the opportunity to assist him a number of times when he is called upon by families of deceaseds to help in the distribution of their estates. That is when you will see men being given pots and women will inherit caps. It may be funny but very heart-breaking. And since it's an injunction of Allah, it has to be done like that.

Muhammad Sa'idu Jimada was the first to advice that the articles I started as blog contents at www.inheritanceinislam.blogspot.com be compiled into a book. He also encouraged me to incorporate it into the Foundation's website (which I had the privilege to design) instead of starting an entire new site. I enjoy his tremendous support in every ramification. May Allah reward you abundantly. Special gratitude goes to every member of my family, nuclear and extended, for providing an enabling environment which facilitated the writing of this book.

I also thank my very good friend and teacher, Mallam Shuaibu Daja for his useful advice and wonderful assistance. He is always at my beck-and-call despite his tight schedule. My deep appreciation goes to Alhaji Muhammadu Salawu and Dr Adamu AbdulMalik for their fatherly roles and valuable time. To Ibrahim S. Ahmed and Mahmud Umar, I say thank you!

Muhammad Imran Muhammad

FORWARD

In the Name of Allah, the Most Beneficent, the Most Merciful. May the peace and blessings of Allah be on the noblest Apostle of Allah, Muhammad (peace be upon him), his household and followers till the Day of Judgement. *Amin.*

It is a great privilege for me to have gone through this write-up authored by a brilliant, intelligent and hardworking brother on an important aspect of Islam: Inheritance. For the fact that death is a channel through which every living soul must pass through, when it comes, the deceased usually leaves behind an estate which is to be shared among his relations as ordained by Allah. Therefore, without the knowledge of inheritance, an important commandment of Allah will not be carried out or will be done wrongly. So, the importance of this knowledge cannot be over emphasised. Though it is *fardul-kifaya* not *fardul-'ayn*, the Holy Prophet (peace be upon him) encouraged Muslims to learn it as quoted by the author from Ibn Majah's collection.

This work is intended to give the reader a clear understanding of the subject matter as it is simplified with good examples and authorities from the Qur'an and Hadith. The writer has gone extra-mile to explain some basics before discussing certain aspects for more clarity. This is to enable and encourage Muslim brothers and sisters especially those that acquired strictly western education to better appreciate this knowledge despite its complexity.

I therefore, pray to Almighty Allah to bless the author for this wonderful work aimed at the propagation of knowledge in the *Ummah*. I also pray to Allah to enrich Islam with the likes of this scholar so that they make useful contributions through writings in order to uplift the religion and to the benefit of mankind in general. *Amin.*

Musa Alhaji Baba (Mantuntun)

Abayi Close, Minna

Niger State.

DEDICATION

To my wife, Hassana Abdullahi Bako, with whom half of my religion is complete and Aaliya Salihu Maigari; the newest members of our family.

INTRODUCTION

In the name of Allah, the First, the Responsive.

Before now, books on inheritance meant for English readers concentrated more on explaining the shares of each heir probably with one or two examples only. But inheritance problems are diverse that mere knowing the shares of the heirs does not provide answers to them. In fact, these shares change depending on the circumstance. So what is required is a TEMPLATE that can solve any kind of inheritance problem. That is what this book seeks to achieve.

The distinguishing feature of this write-up is that almost half of it is dedicated to elucidating the Mathematics of inheritance because the secret of solving inheritance problems is to know the relationship between numbers. These are: *tamathul*, *tadakhul*, *tabayin* and *tawafiq*. Nevertheless, with the realisation that most people detest Mathematics, attempt has been made to simplify it. Some topics in elementary Mathematics like LCM, HCF and prime numbers were reviewed for better understanding of a few concepts.

Solving inheritance problems is not done by trial and error. There are standard rules governing it. For that reason, 22 rules of (total) exclusion, 14 rules of partial exclusion and 26 rules (coded A – Z) of determining base number (*aslul mas-ala*) were developed. A total of 48 examples with solutions were used to apply all the rules.

As this book is intended to provide basic knowledge of inheritance, advanced topics which to my judgement are rare occurrences like inheritances of foetus, hermaphrodite and missing person among others were left out. They have been suggested for Further Reading.

I pray that Allah accepts this effort as an act of *Ibadah*.

Muhammad Imran Muhammad

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PREAMBLE

Death is inevitable. As a result, Islam being a complete way of life has spelt out how the deceased's estate should be shared among his heirs. By estate, we mean the entire property a deceased leaves behind such as houses, cars, clothes, furniture, land, farm, jewellery, cash (at hand and in bank), shares, bonds, and so on including socks and underwear; everything. *Subhanal-Lah.*

It should be noted that when a Muslim dies, the obligations to be taken out of his estate (in order of priority are):

1. *Kafn* (shroud) and other basic expenses relating to the funeral like grave digger's wage, transportation to cemetery, etc if they are to be paid for. A surviving husband is responsible for the shroud and burial expenses of his deceased wife if she is not endowed. There is difference of opinion in respect of a wealthy woman. Some scholars said that the husband is still responsible while others are of the view that they should be paid from her estate.
2. Repayment of his outstanding debt.

Narrated Abu Hurairah: The Messenger of Allah (peace be upon him) said: "A believer's soul remains in suspense (cannot enter Paradise) until all his debts are paid off." **Ahmad, Ibn Majah, and Tirmidhy Collections.**

Narrated Muhammad ibn Abdullah ibn Jahsh: The Messenger of Allah (peace be upon him) said: "By Him in whose hand Muhammad's soul is, if a man were to be killed in Allah's path then come to life, be killed again in Allah's path then come to life, and be killed once more in Allah's path then come to life owing a debt, he would not enter Paradise till his debt was paid." **Bukhari Collection.**

Generally, debt can be owed to fellow humans or to Allah e.g. unpaid *Zakat*. The former has to be repaid, no questions about that. Scholars differ as regards repayment of debt due to Allah. Some are of the view that it should be repaid while others are in support of non-repayment. A third view is that it should be repaid if and only if the deceased instructs same.

3. Fulfilment of his will.

Provided it does not exceed one-third (1/3) of the entire estate and it's not in favour of an heir. If any or both of these conditions are not satisfied, the validity of the will is subject to approval of all the heirs, otherwise, its void.

4. The rightful heirs then inherit the remaining estate.

Significance of acquiring and teaching the Laws of Inheritance

Narrated Abu Hurairah: The Prophet (peace be upon him) said: “Learn the *Fara'id* (laws of inheritance) and teach it, for it is half of knowledge and it is (easily) forgotten, and it is the first thing to be taken (away) from my nation.” **Ibn Majah Collection.**

Narrated Abdullah ibn Mas'ud: Allah's Messenger (peace be upon him) said to me, “Acquire the knowledge and impart it to the people. Acquire the knowledge of *Fara'id* (laws of inheritance) and teach it to the people, learn the Qur'an and teach it to the people; for I am a person who has to depart this world and the knowledge will be taken away and turmoil will appear to such an extent that two people will not agree in regard to a case of inheritance distribution and find none who would decide between them.”

Tirmithy Collection.

CHAPTER ONE

MALE HEIRS

Male heirs of a deceased are fifteen (15):

1. Son.

This refers to a legitimate male child. A man can only have a legitimate child after contracting a legally (Shari'ah) acceptable marriage with a woman outside his prohibited degree; while a woman can have a legitimate child with or without a formal marriage contract. This will be discussed in details under Inheritance of Children in chapter three.

2. Grandson or his descendant.

Everyone has two categories of relatives: agnates and cognates. Agnates are relatives whose connection is traceable through the father or male line such as paternal grandparents, paternal uncle, paternal aunt, etc., while cognates are relatives whose connection is traceable through the mother or the female line like maternal grandparents, maternal uncle, maternal aunt and so on. Now, only agnates are eligible to inherit the estate of a deceased; meaning that all cognates are NOT bona-fide heirs except uterine brothers/sisters and maternal grandmother to whom the Qur'an assigns a share (more on this later).

Therefore, the grandson referred to here as a male heir is the one through a son. The grandson through a daughter is a non-heir. For example, 'A' (who may either be a male or female) has a son 'B', who also begets a son 'C'. When 'A' dies, his/her son 'B' inherits from him/her as the case in (1) above. 'C' is excluded. We shall discuss 'exclusion' in the next chapter. However, if 'B' is absent at the time 'A' dies; meaning that 'B' died before 'A', then 'C' the grandson will represent or stand in place of 'B' and inherit from 'A'. I call this phenomenon "jumping."

Assuming 'C' has a son 'D' who also has a son 'E', 'E' will inherit from 'A' if and only if 'B', 'C' and 'D' are absent. That is what is meant by "his descendants," i.e. the descendants of grandson 'C'. Put in another way, a grandson will inherit from his grandfather if his father is absent. Likewise, a great-grandson will inherit from his great-grandfather if his father and grandfather are absent. Now, very important. This rule applies to ONLY sons. That is, 'A' (may be of any gender) but 'B', 'C', 'D', 'E' ... must all be males.

If 'C' were to be a female and she marries 'X' who has a father 'Y' and grandfather 'Z', and the marriage is blessed with a son 'D'; when 'A' dies, 'C' will inherit from him/her if 'B' is absent. But 'D' CANNOT inherit from 'A' even if 'B' and 'C' are absent because 'A' and 'B' are his cognates. 'D' is only entitled to inherit from his parents 'X' and 'C', paternal

grandfather ‘Y’ (in the absence of ‘X’) and paternal great-grandfather ‘Z’ (in the absence of both ‘X’ and ‘Y’).

In summary, the grandson entitled to inheritance is son’s son, not daughter’s son. Also the descendants of son’s son (‘D’ and ‘E’ as in the first example above) will “jump” and inherit from ‘A’ provided ‘B’ and ‘C’ are absent. This trend will continue down the line as far as a female does not appear. If a female emerges, she will also “jump” but her children (male and female) will not, because to them the line is cognate.

3. Father.

This is straight forward. A father shall inherit from his son or daughter.

4. Paternal grandfather or his descendant.

By now it’s clear that maternal grandfather is a non-heir. So, a paternal grandfather will inherit from his grandson or granddaughter in the absence of his son. Using the illustration above, given that ‘A’, ‘B’, ‘C’ and ‘D’ are all males and ‘E’ is either male or female; when ‘E’ passes on, ‘D’ (his or her father) will inherit from him or her as the case in (3) above. In the absence of ‘D’, ‘C’ (the paternal grandfather) will inherit from ‘E’. The same ruling applies to descendants ‘B’ and ‘A’.

5. Full brother.

He has the same father and same mother with the deceased.

6. Consanguine brother.

He has the same father but different mother with the deceased.

7. Uterine brother.

He has the same mother but different father with the deceased.

8. Full brother’s son or his male descendant.

We said that in the absence of the son, the grandson replaces him. If the grandson is also absent, the great-grandson “jumps” and take the place of the son. If a female appears, she equally has the privilege of “jumping,” then the line terminates. The difference here is that the descendants all have to be males; such that when a full brother is absent, his son replaces him and the trend continues. Whenever a female emerges, she is not entitled to “jump,” and the line terminates. That is what is meant by “male descendants.”

9. Consanguine brother’s son or his male descendant.

10. Full paternal uncle.

Father’s elder or younger brother from the same father and mother.

11. Half paternal uncle.

Father’s elder or younger brother from the same father but different mother.

12. Full paternal uncle’s son or his male descendant.

13. Half paternal uncle’s son or his male descendant.

14. Husband.

A husband will inherit from his wife if she dies before him. Likewise, if a man divorces his wife with one or two pronouncements (i.e. revocable divorce) and she dies WHILE in her *Iddah* (i.e. waiting period), he will inherit from her because technically, she remains his wife. However, if the divorce is irrevocable (three pronouncements), he will NOT inherit from her whether the *Iddah* has expired or not.

15. Patron.

A man who sets a slave free will inherit from the slave if the later has no heir.

FEMALE HEIRS

Female heirs are nine (9):

1. Daughter.

A daughter will inherit from her father and mother. This provision does not extend to her children. That is to say, her children cannot replace or represent her to inherit from their (maternal) grandfather or (maternal) grandmother in her absence.

2. Son's daughter.

If a son has a daughter, she will inherit from the son's father or mother (her paternal grandparents) in the absence of the son. The rule also applies to son's son's daughter, son's son's son's daughter, and so on. This has been explained earlier under "grandson or his descendants."

3. Mother.

When a son or daughter passes on, his/her mother is entitled to a part of his/her estate. She cannot be excluded no-matter what happens.

4. Either grandmother.

In the absence of mother, both grandmothers i.e. maternal and paternal will inherit from a deceased. Here, the "ascendant rule" applies, such that if one or both grandmothers is/are absent, the great-grandmothers will take their place(s) and inherit from the deceased.

5. Full sister.

6. Consanguine sister.

7. Uterine sister.

8. Wife.

A wife will inherit from her late husband. She cannot be excluded. She will also inherit from him if he dies after divorcing her with one or two pronouncements (revocable divorce) provided her *Iddah* has NOT elapsed. But if the divorce is irrevocable (three pronouncements), she will not inherit from him whether her *Iddah* has elapsed or not. However, if the husband were to be "insensitive" and divorces his wife irrevocably DURING his final

illness in which he dies, the four schools of Islamic jurisprudence have divergent opinions:

- a) As-Shafi'i - She will NOT inherit from him whether or not the *Iddah* has expired.
- b) Abu-Hanifa - If the *Iddah* has not expired, she will inherit from him, otherwise, she will become a non-heir.
- c) Ahmad ibn Hanbal - She has the right to inherit from him whether the *Iddah* has expired or not provided she has not married another person.
- d) Malik - She will inherit from him even if the *Iddah* has expired or she has married another person.

7. Patroness.

A woman who sets a slave free will inherit from him/her so long as he/she has no heir.

NON-HEIRS

Non-heirs are those relatives not entitled to any part of the deceased's estate. They include:

1. Daughter's sons and daughters and their descendants.

They will inherit through their father's (daughter's husband's) line only. Their mother's line is cognate.

2. Sister's sons and daughters and their descendants.

This refers to all the three types of sisters: full, consanguine and uterine. Their children will inherit through their father's line only as the case with daughter's children.

3. Daughters of full brother.

4. Daughters of consanguine brother.

5. Daughters of full brother's son.

6. Daughters of consanguine brother's son

7. Sons and daughters of uterine brother.

8. Sons and daughters of uterine sister.

9. Daughters of full paternal uncle.

10. Daughters of half paternal uncle.

11. Daughters of full paternal uncle's son.

12. Daughters of half paternal uncle's son.

13. Paternal aunt, her children and their descendants.

14. Maternal uncle, his children and their descendants.

15. Maternal aunt, her children and their descendants.

16. Maternal grandfather's mother.

Given that maternal grandmother (the wife of maternal grandfather) is an heir in the absence of mother, if the maternal grandmother is also

absent, who takes her place? Her mother. Not her husband's mother. Therefore, maternal grandfather's mother is a non-heir.

17. Paternal grandmother's father.

As in (11) above, paternal grandmother is also an heir in the absence of mother; but in her absence, her mother replaces her, not her father.

IMPEDIMENTS TO INHERITANCE

Impediment means barring an heir from getting his/her share of the deceased's estate due to certain circumstances. These include:

1. Murder.

An heir who deliberately murders the deceased will neither inherit from the latter's estate nor from the *diyya* (i.e. blood money). If the murder is accidental, he/she will inherit from the deceased's estate but not from the *diyya*.

2. Difference of religion.

A Muslim does not inherit from a non-Muslim relative no-matter how close they are, and vice-versa. For instance, a Muslim father who has a non-Muslim son will not inherit from him and the other way round.

3. Simultaneous death.

When two or more people who are rightful heirs of one another like father and son, husband and wife, etc die at the same time maybe under a collapsed building or in similar circumstance, and it is uncertain who died first, they will not inherit from each other. But if it's clear that the husband died before the wife for instance, she will be listed among the surviving heirs of the husband and given her share of his estate. Thereafter, her heirs will inherit her estate PLUS her share of the husband's estate.

4. *Li'an* (Cursing for adultery).

This happens when a man denies the paternity of his wife's pregnancy and they end up swearing and cursing themselves as prescribed by Allah in the Qur'an (24: 6 – 9). "And for those who accuse their wives, but have no witnesses except themselves, let the testimony of one of them be four testimonies (i.e. testifies four times) by Allah that he is one of those who speak the truth. And the fifth (testimony) (should be) the invoking of the Curse of Allah on him if he be of those who tell a lie (against her). But it shall avert the punishment (of stoning to death) from her, if she bears witness four times by Allah, that he (her husband) is telling a lie. And the fifth (testimony) should be that the Wrath of Allah be upon her if he (her husband) speaks the truth." The child that results will inherit from his mother only.

5. Slavery.

A slave and everything he owns belongs to his master. As far as he remains a slave, he will not inherit from his relatives and they will not inherit

from him. The logic is that if he inherits, whatever he gets belongs to his master and if his relatives are to inherit from him, they will actually be inheriting part of the master's estate.

6. “Emergency marriage”.

This refers to a marriage that takes place when either the bride or groom is in a state of ill health with a 50:50 percentage of survival and death or the percentage of death is higher. The healthy partner will not inherit from the sick one if he/she dies as a result of that illness. Conversely, the sick partner will not inherit from the healthy one supposing the latter incidentally dies before the former. But if the sick partner fully recovers, then either of them dies, this rule will not apply.

CHAPTER TWO

EXCLUSION

Exclusion means preventing a rightful heir from having any share of the deceased's estate due to the PRESENCE of another heir. The principle behind who excludes who is the degree of closeness to the deceased. The closer relatives will exclude those who are not so close. For example, son will exclude grandson. A grandson can only inherit in the absence of a son since the latter is closer to the deceased than the former. Note that there is a difference between exclusion and impediments to inheritance. In exclusion, a "stronger" heir eliminates a "weaker" heir while impediment has to do with preventing an heir from inheriting due to circumstances like murder, difference of religion, slavery, etc.

There are two types of exclusion: total and partial. The definition above refers to total exclusion. Partial exclusion means reducing the share of the estate an heir should have gotten due to the existence of another heir. For instance, a husband inherits half ($\frac{1}{2}$) of his wife's estate if she has no child, but supposing she has a child even if from a previous husband, he gets one-quarter ($\frac{1}{4}$) of her estate. This reduction from $\frac{1}{2}$ to $\frac{1}{4}$ is called partial exclusion. Details in chapter five. Meanwhile, we intend to concentrate on total exclusion. So, unless otherwise specified, whenever we say "exclusion," we mean "total exclusion."

Now, among the heirs (male and female), there are those I call "basic heirs," because they cannot be excluded irrespective of who is present. They are: son, daughter, father, mother, husband and wife. The worst that can happen to them is to be partially excluded. Exclusion is quite a complex concept. Thus, we will try to simplify it using analogies. Do not mind any repetitions. They are for easier and clearer understanding.

Let's say that an individual 'X' (who may either be a male or female) has two sons 'A' and 'B'. 'A' has 2 sons and a daughter while 'B' has a son and 3 daughters. This means that 'X' has 7 grandchildren (3 sons, 4 daughters).

- a) If 'A' and 'B' are absent (i.e. have died), when 'X' eventually passes on, the 7 grandchildren will replace or represent their fathers and inherit from his estate.
- b) Supposing 'A' and 'B' are both present at the time 'X' dies, they will exclude their children from having any share of 'X's' inheritance.
- c) If at the time 'X' passes on, only 'A' is present, (i.e. 'B' has died before 'X'), the 4 children of 'B' cannot take the place of their father to inherit from 'X' due to the presence of 'A'. This means that 'A' will exclude both his children and the children of his brother 'B'. But

this rule applies exclusively when ‘A’ is a SON and not a daughter.
Therefore,

Rule 1: A son excludes ALL grandchildren.

Modifying the analogy a bit, if ‘A’ were to be a daughter and ‘B’ a son, what happens?

- a) Assuming ‘A’ and ‘B’ are both absent when ‘X’ dies, only the 4 children of ‘B’ will inherit from him. The children of daughter ‘A’ are non-heirs.
- b) If ‘A’ and ‘B’ are present at the time ‘X’ passes on, they will exclude the children of ‘B’.
- c) On the other hand, if ‘B’ died before ‘X’, and ‘A’ is the only surviving child, she will NOT exclude the children of ‘B’. However, this does not mean that ‘B’s’ children will take the place of their father or will be entitled to their father’s share of the estate. A new sharing formula is to be created for them [We shall see the details of this sharing formula with numeric examples in subsequent chapters *Insha Allah*. Here we are just interested in discussing who excludes who and in what circumstance(s)]. This brings us to the next rule of exclusion.

Rule 2: A daughter does not exclude grandchildren [i.e. children of her late brother(s)].

Supposing an individual ‘Z’ (either male or female) has a son ‘P’ and two daughters ‘Q’ and ‘R’. ‘P’ is married and is blessed with daughters only. Whether ‘Q’ and ‘R’ are married with or without children is immaterial because it makes no difference. Their children are non-heirs.

- a) ‘P’ dies before ‘Z’. When ‘Z’ passes on, ‘Q’ and ‘R’ will exclude the grandchildren.
- b) If ‘P’ has at least a son; in the same circumstance, ‘Q’ and ‘R’ will NOT exclude the grandchildren. However, they (the grandchildren) will not be entitled to the share of the estate their father (‘P’) should have gotten. A new sharing formula is created for them. Hence,

Rule 3: Two or more daughters exclude strictly granddaughters.

Rule 4: Two or more daughters do not exclude grandchildren comprising of at least a grandson.

This pair of rules has a wide range of application.

1. Inheritance of second and third generation heirs.

The children of the deceased are the first generation heirs; his/her grandchildren are the second generation heirs, while his/her great-grandchildren are the third generation heirs. Let’s say a deceased ‘W’ (male or female) has a son ‘K’ who in turn begets a son ‘L’ and two daughters ‘M’

and ‘N’. ‘L’ grew up, got married and is blessed with five (5) daughters. In this case,

‘K’ = first generation heir of ‘W’.

‘L’, ‘M’ and ‘N’ = second generation heirs of ‘W’.

Five daughters = third generation heirs of ‘W’.

If son ‘K’ and grandson ‘L’ pass on before ‘W’, ‘M’ and ‘N’ the surviving second generation heirs will exclude all the 5 daughters because they are all female. Supposing there is at least a son among the third generation heirs, ‘M’ and ‘N’ cannot exclude them, rather a new sharing formula is created for them.

This is quite straight-forward. We can complicate it a bit. ‘W’ has three children. A son ‘A’ and two daughters ‘B’ and ‘C’. ‘A’ begets 2 sons ‘S’, ‘T’ and two daughters ‘U’, ‘V’. ‘B’ has two sons ‘X’ and ‘Y’. ‘C’ is blessed with a daughter ‘Z’. ‘S’ has 4 daughters, ‘T’ has 2 daughters, ‘U’ has a son and 2 daughters, ‘V’ has 2 sons, ‘X’ has a son and a daughter, ‘Y’ has 3 sons and ‘Z’ has a daughter. Confusing? Not really. Taking some moment to sketch the family tree will help.

- a) When ‘W’ dies and the status-quo remains (i.e. no one died before him/her), ‘A’, ‘B’ and ‘C’ (the first generation heirs) will inherit from him/her. The second and third generation heirs will all be excluded due to the presence of son ‘A’.
 - b) If ‘A’ died before ‘W’, ‘B’ and ‘C’ will NOT exclude ‘S’, ‘T’, ‘U’ and ‘V’ because ‘S’ and ‘T’ are sons. Note that ‘X’, ‘Y’ and ‘Z’ are non-heirs (grandchildren through daughters).
 - c) In a situation whereby all the first generation heirs (‘A’, ‘B’ and ‘C’) as well as ‘S’ and ‘T’ are absent, ‘U’ and ‘V’ will exclude the daughters of ‘S’ and ‘T’ from inheriting from ‘W’ because only the six (6) of them are rightful heirs. Others are non-heirs.
 - d) Supposing ‘T’ has a son in addition to his 2 daughters, in the absence of ‘S’ and ‘T’ and the first generation heirs, ‘U’ and ‘V’ cannot exclude the seven rightful heirs of the third generation (i.e. 4 daughters of ‘S’ and a son and 2 daughters of ‘T’). The seven (7) of them will inherit from ‘W’. The presence of ‘T’s’ son will entitle not only his daughters but also all the daughters of ‘S’ to a share of ‘W’s’ estate.
2. Another application of this pair of rules (though in a modified form) is when full sisters are inheriting along with consanguine sisters. We recall that sisters’ children are non-heirs. So the possibilities are as follows:

Rule 5: One full sister does not exclude consanguine sister(s).

Rule 6: Two or more full sisters exclude strictly consanguine sisters.

Rule 7: Two or more full sisters do not exclude consanguine sisters if a consanguine brother is also present.

The slight modification is that both sisters (full and consanguine) are in the same generational level, unlike the previous situations whereby two or more females in one generation will exclude strictly female(s) in a generation lower than theirs.

Next, let's consider a set of heirs in a particular order. I call the set "alpha" and it's made up of:

- Full brother
- Consanguine brother
- Full brother's son or his descendant
- Consanguine brother's son or his descendant
- Full paternal uncle
- Half paternal uncle
- Full paternal uncle's son or his descendant
- Half paternal uncle's son or his descendant

The order of arrangement is VERY important when it comes to exclusion because a member excludes all those below him. For instance, if a full brother is present, every other member is excluded; likewise when a full brother is absent, a consanguine brother if available excludes other members, and so on. Therefore,

Rule 8: Full brother excludes consanguine brother and those below him.

Rule 9: Consanguine brother excludes full brother's son (or his descendant) and those below him.

Rule 10: Full brother's son (or his descendant) excludes consanguine brother's son (or his descendant) and those below him.

Rule 11: Consanguine brother's son (or his descendant) excludes full paternal uncle and those below him.

Rule 12: Full paternal uncle excludes half paternal uncle and those below him.

Rule 13: Half paternal uncle excludes full paternal uncle's son (or his descendant), his own son or his son's descendant.

Rule 14: Full paternal uncle's son (or his descendant) excludes half paternal uncle's son (or his descendant).

Note that any heir (outside alpha) that can exclude a full brother automatically excludes all other members of the set. Thus,

Rule 15: Son excludes full brother.

Rule 16: Grandson through son excludes full brother.

This is applicable in the absence of a son. Recall that grandson through daughter is a non-heir. Also the rule trickles down to descendants provided they are ALL sons; such that great-grandson excludes full brother in the absence of son and grandson.

Rule 17: Father excludes full brother.

Observe the connection between rules 15 and 16. The son of a deceased will exclude the deceased's full brother. In the absence of the son, the grandson will exercise the same power and exclude the full brother. Conversely, father excludes full brother as well (rule 17). Now, if the father is not present, who takes his place? Of course his father i.e. the deceased's paternal grandfather. But does the grandfather in addition to having a share of the estate also have the authority to exclude full brother? Even the Companions of the Holy Prophet (peace be upon him) differed on this because the ruling is neither clearly stated in the Qur'an nor did such a circumstance arise during the lifetime of the Holy Prophet (peace be upon him) to necessitate a verdict.

The first opinion is that grandfather excludes full brother because he inherits all the privileges of the father; just like the grandson inherits all rights and privileges of a son. The second view is that grandfather does not have the ability to exclude full brother even though he can "jump" and replace the father to inherit from the deceased. One of the arguments of the proponents of this view (which has been adopted by majority of Jurists like Imams Malik, As-Shafi'i, Ahmad ibn Hanbal and others) is that father excludes his mother i.e. paternal grandmother (see below) but grandfather cannot exclude her because he (grandfather) does not have the same status as the father. As a result, grandfather cannot exclude full brother as a father does.

IMPORTANT: Full and consanguine brothers are the only ones not excluded by grandfather. It is generally agreed that grandfather excludes other members of alpha.

Rule 18: Son, grandson (or his descendant) and father EACH excludes full and consanguine sisters.

Again, grandfather does not exclude full and consanguine sisters.

Rule 19: Son, grandson (or his descendant), daughter, granddaughter through a son, father and paternal grandfather (or his ascendant) EACH excludes uterine brothers and sisters.

Rule 20: Mother excludes both grandmothers.

Rule 21: Father excludes paternal grandmother (i.e. his own mother) only.

NOTE ON DIFFERENCE OF OPINION

When the Apostle of Allah (peace be upon him) intended to send Mu'adh ibn Jabal to Yemen, he asked: "How will you judge when the occasion of deciding a case arises?" He replied: "I shall judge in accordance with Allah's Book." He asked: "(What will you do) if you do not find any guidance in Allah's Book?" He replied: "(I shall act) in accordance with the *Sunnah* of the Apostle of Allah (peace be upon him)." He asked: "(What will you do) if you do not find any guidance in the *Sunnah* of the Apostle of Allah (peace be upon him) and in Allah's Book?" He replied: "I shall do my best to form an opinion and I shall spare no effort." The Apostle of Allah (peace be upon him) then patted him on the breast and said: "Praise be to Allah Who has helped the messenger of the Apostle of Allah to find something which pleases the Apostle of Allah." **Abu Dawud Collection.**

The following can be deduced from the Hadith:

- a) The primary sources of Shari'ah (Qur'an and Sunnah/Hadith) do not provide EXPLICIT answers to each and every problem or situation. We will like to emphasize the word: EXPLICIT. This is because general answers to all human problems past, present and future can be found in either or both of them.
- b) Qualified Muslims are allowed to analytically find solutions to issues not categorically solved by the Qur'an and/or Hadith. This is called *Ijtihad*; defined by Muhammad ibn Ali Al-Shawkani as quoted by Abu Ismael al-Beirawi as "the total expenditure of effort made by a Jurist in order to infer, with a degree of probability, the rules of Shari'ah from their detailed evidence in the sources (i.e. Qur'an and Hadith) in a manner the *Mujtahid* (Jurist who does *Ijtihad*) feels unable to exert any more effort."

Sheikh Muhammad ibn Saalih al-'Uthaymeen listed four conditions that must be fulfilled for an *Ijtihad* to be valid.

- i. The person performing *Ijtihad* is qualified to do so (i.e. a pious, just and trustworthy Muslim who is knowledgeable in the understanding and interpretation of the Qur'an and Hadith).
- ii. The issue is open to *Ijtihad*. Scholars have identified certain matters to which *Ijtihad* should not be exercised. They are: existence of Allah, truthfulness of Muhammad (peace be upon him) and authenticity of the Qur'an.
- iii. The person exerts his utmost in trying to arrive at the correct ruling.
- iv. The person has some form of evidence which he uses to justify his position.

Thus, the first reason why differences of opinion may exist is lack of explicit ruling in neither the Qur'an nor Hadith. Opinions may also differ due to variation in the interpretation of a Qur'anic verse or statement of the Prophet (peace be upon him). For example, Ibn Umar narrated: On the day of *Al-Ahzab* (i.e. Clans) the Prophet (peace be upon him) said, "None of you (Muslims) should offer the 'Asr prayer but at Banu Quraiza's place." The 'Asr prayer became due for some of them on the way. Some of those said, "We will not offer it till we reach it i.e. the place of Banu Quraiza," while some others said, "No, we will pray at this spot, for the Prophet did not mean that for us." Later on it was mentioned to the Prophet and he did not berate any of the two groups. **Bukhari Collection.**

The companions understood the Prophet's instruction differently. The first group comprehended it literally so they delayed their prayer until they arrived at Bani Quraiza at sunset. The second group understood it metaphorically such that the Prophet's intention was for them to make haste in setting off so that by the time 'Asr prayer becomes due, they would have reached Bani Quraiza. So when the time of 'Asr prayer set in and they were still on the way, they prayed without delaying it.

Now, why did the Prophet (peace be upon him) not reprimand any of the groups? Because each had some form of evidence which it uses to justify its position. Then, will both of them be correct? Certainly not. The following Hadith clarifies this:

Narrated 'Abdullah ibn 'Amr bin Al-'As: Allah's Apostle (peace be upon him) said, "If a judge gives a verdict according to the best of his knowledge and his verdict is correct (i.e. agrees with Allah and His Apostle's verdict) he will receive a double reward, and if he gives a verdict according to the best of his knowledge and his verdict is wrong, (i.e. against that of Allah and His Apostle) even then he will get a reward." **Bukhari Collection.**

Therefore, the clause "and his verdict is wrong" means that only one opinion (out of two, three or more) is correct; yet the "incorrect" one cannot be said to be erroneous since its proponent tried his utmost to arrive at the correct ruling and he has some form of evidence to justify his position. Consider this Hadith:

Narrated 'Abdur-Rahman bin Abza: A man came to 'Umar bin Al-Khattab and said, "I became *Junub* but no water was available." 'Ammar bin Yasir said to 'Umar, "Do you remember that you and I (became *Junub* while both of us) were together on a journey and you didn't pray but I rolled myself on the ground and prayed? I informed the Prophet about it and he said, 'It would have been sufficient for you to do like this.' The Prophet then stroked lightly the earth with his hands and then blew off the dust and passed his hands over his face and hands." **Bukhari Collection.**

For the Prophet (peace be upon him) to have taught ‘Ammar the proper way of performing *Tayammum* means that his view was more likely to be correct. But at the same time, ‘Umar was not told that he was wrong as he tried his best to arrive at the correct ruling and he had some form of evidence to justify his position; which is (and Allah knows best) that prayer cannot be performed in a state of impurity and since he has no access to water, then prayer is not binding on him.

In conclusion, when Jurists differ on an issue, a Muslim has the right to pick any of the views. However, when one opinion is more popular than the other, he is advised to choose the former.

CHAPTER THREE

INHERITANCE OF CHILDREN

In Islam, there are three categories of children: legal, biological and those that are both legal and biological. By legal, we mean children that result from a marriage approved by the Shari'ah. Thus for a man, only his children that are both legal and biological are considered his children and by extension, his heirs; while for a woman, the simple act of giving birth to a child (biological) makes them (mother and child) rightful heirs of one another. A few illustrations will elucidate this.

- a) The Muslim children of a Muslim couple who married legally will inherit from their parents and vice-versa. Supposing any of the children happens to be a non-Muslim, he will neither inherit from them nor will they inherit from him due to difference of religion which is an impediment to inheritance.

At this point let's spell out what difference of religion really mean. Some scholars are of the view that each religion should be taken on its face-value while others argue that there are two religions only: Islam and others. Therefore, if we take a hypothetical family consisting of a Muslim father, Christian mother and Jewish child for example, based on the first opinion, none of them will inherit from one another, while the second view gives the mother and the child the right to inherit from each other. How they do that is left to them.

- b) A Muslim man is permitted to marry a pious, reserved and religious Christian or Jewish woman. The children that result from such a marriage will inherit from the man and vice-versa if they are Muslims. Assuming the children decide to follow the religion of their mother, they will inherit from her only and vice-versa.
- c) The children of a Muslim man who marries a woman that is neither a Christian nor a Jew such as a Buddhist, a Zoroastrian or an atheist will not inherit from him since they are not his legal children even though they may be his biological children. Why? Such marriage is not recognised by Shari'ah, hence it's void. The children will inherit from their mother only and vice-versa. And if they are Muslims, they will also not inherit from her due to difference of religion.
- d) A Muslim woman is not allowed to marry a non-Muslim man even if he is a pious, reserved and religious Christian or Jew. If the marriage takes place its void. But the children will inherit from her (and she will inherit from them) because she is their biological mother IF THEY ARE MUSLIMS, otherwise the difference of religion condition will set in and bar them from inheriting from one another.

- e) If a man and woman fornicates, (Allah forbids), and a child is born as a result, whether or not they get married afterwards, the man is the biological father but NOT the legal father of the child but the woman is both the biological and legal mother. Hence such a child will inherit from his mother ONLY and vice-versa.

This is evident from a Hadith narrated by ‘Abdullah ibn ‘Amr ibn al-‘As who said: “The Prophet (peace be upon him) decided regarding one who was treated as a member of a family after the death of his father, to whom he was attributed when the heirs said he was one of them, that if he was the child of a slave-woman whom the father owned when he had intercourse with her, he was included among those who sought his inclusion, but received none of the inheritance which was previously divided; he, however, received his portion of the inheritance which had not already been divided; but if the father to whom he was attributed had disowned him, he was not joined to the heirs. If he was a child of a slave-woman whom the father did not possess or of a free woman with whom he had illicit intercourse, he was not joined to the heirs and did not inherit even if the one to whom he was attributed is the one who claimed paternity, since he was a child of fornication whether his mother was free or a slave.” **Abu Dawud Collection.**

The rulings in (c), (d) and (e) above do not imply that Islam condones any of these acts. The perpetrators are to be duly punished according to Shari’ah. We are interested in the inheritance of innocent children that are products of these unfortunate incidences.

- f) A child will in addition inherit from his mother only after *li’an* (cursing for adultery) which happens when a man denies the paternity of his wife’s pregnancy and they end up swearing and cursing themselves. The Hadith of ‘Abdullah ibn ‘Amr ibn al-‘As above confirms this: “...but if the father to whom he was attributed had disowned him, he was not joined to the heirs...”

- g) An adopted child will not inherit from his adoptive parents and vice-versa due to lack of biological relationship between them. But they can make a will in his/her favour which must not exceed 1/3 of their estates.

- h) **In-vitro fertilisation:** This is the process of fertilising an egg with sperm in an artificial environment such as test-tube. A child produced using this method is popularly called “test tube baby.”

The procedure involves stimulation of the woman with injected medications to develop multiple follicles (egg-containing structures) in the ovaries. Thereafter, a trans-vaginal ultrasound-guided procedure is performed to remove the eggs from the follicles which are fertilized in the laboratory

with her partner's sperm. The embryos are finally placed in the woman's uterus where they will hopefully implant and develop to result in a live birth.

According to Sheikh 'Abd-Allaah al-Jibreen as cited by Sheikh Muhammad Al-Munajjid, in-vitro fertilization is permissible in Islam if certain conditions are fulfilled. They are:

- i. That there is a real need for that. A delay of one or two years in having children is not an excuse for the couple to pursue this or similar methods. Rather they should be patient, for Allah may grant them a way out soon without them doing anything that is *haram*.
- ii. The woman should not uncover her '*awrah* before men when there are female staffs available.
- iii. It is not permissible for the husband to masturbate; rather he may be intimate with his wife without penetration, and produce semen in this manner.
- iv. The woman's eggs and man's sperm should not be kept in a freezer for later use, or another appointment, and there should not be any delay in placing them in the woman's uterus. Rather that should be done immediately without any delay, lest they be mixed with others or be used for other people.
- v. The sperm must come from the husband and the egg from the wife, and be implanted in the wife's uterus. Anything else is not permissible at all.
- vi. There should be complete trust in the doctors who are doing this procedure.

As far as inheritance is concerned, the most important condition is (v). This does not imply that others are not important as well. When (v) is fulfilled, the child will inherit from both the father and mother and vice-versa. However, if there happens to be a mix-up such that another man's sperm was used to fertilise the wife's egg, the child will inherit from the mother only. Conversely, if the husband's sperm was used to fertilise another woman's egg, the child will inherit from the father only. In a situation whereby the sperm and egg of others were used, there will be no inheritance between the child and his "so-called" parents because they are no-more-than adoptive parents. Note that even if the child develops in the wife's womb, so long as it's not her egg, the biological connection that will necessitate inheritance between them is missing.

Son

1. If he is the only heir, he inherits the whole estate of his deceased father or mother.

2. When other heirs are inheriting along with him, he becomes a residuary i.e. takes whatever remains after other heirs have gotten their shares.
3. Two or more sons share equally the whole estate if they are the only heirs.
4. Two or more sons share equally the residue of the estate when other heirs are present.

Daughter

1. If a deceased has only one surviving daughter, she inherits half ($\frac{1}{2}$) of the estate irrespective of whether she is the only heir or not.
2. Two or more daughters share equally two-third ($\frac{2}{3}$) of the estate whether or not they are the only heirs.

One may be tempted to ask: what happens to the remaining $\frac{1}{2}$ of the estate when a daughter is the only heir or the remaining $\frac{1}{3}$ of the estate when two or more daughters are the only heirs? In other words, what is the ruling when available heirs do not exhaust the estate? Jurists differed on this. The various opinions are:

- a) The residue goes to the *bait-ul-mal* (public treasury) because no heir should receive more than what Allah has prescribed for him/her.
- b) The public treasury has been misused; therefore the heirs should redistribute the residue among themselves based on the initial sharing formula. This is technically called *Radd*.
- c) The residue should be given to the cognates (relations whose connection to the deceased is traceable through the mother or female line) who are traditionally non-heirs.

Radd (reduction of base number) and inheritance of cognates are not covered in this write-up, thus they are included in Further Reading.

Son(s) and daughter(s)

In a situation whereby the deceased leaves behind a combination of sons and daughters in whatever form (i.e. son and daughter, son and daughters, sons and daughter or sons and daughters), they share the whole estate if they are the only heirs in a ratio of 2 to 1. Meaning that, a son is given twice the share of a daughter. But if other heirs (that are not excluded by them) are present, they [son(s) and daughter(s)] become residuaries in the sense that they will share the left-over or residue after other heirs have received their shares in the same ratio of 2 to 1. Allah says in the Qur'an:

“Allah commands you as regards your children’s (inheritance): to the male, a portion equal to that of two females...” **Qur'an 4:11**

Non-Muslims and Muslims who do not understand their religion argue that Islam is unjust to women in terms of inheritance. If not, why should it grant the male twice the share of the female even though they are children of the same parents? Answering this question, Hojjat al-Islam Mahdi Hadavi Tehrani says, "... Islam's position on inheritance is in reality to the benefit of the woman. In the Age of Ignorance (*Jahiliyya*), the daughters and wives of the deceased were deprived of inheritance and all the wealth of the deceased went to his sons. Islam, however, came and annulled the laws of the ignorant times and made women amongst the inheritors of the deceased. From its inception, Islam gave women independence in ownership and monetary matters, this being a matter that has only but recently entered the laws of European nations. Even though apparently the inheritance of a man is double that of a woman, when we probe into the matter more thoroughly, we find that the inheritance of a woman is two times that of a man. The responsibilities that have been placed on the shoulders of men necessitates that they spend half of their income on women. Any given man is obligated to spend money on his spouse's home, clothes, food, and other expenses, while the cost of living of himself and his children are on his shoulders. This responsibility of upkeep is to such an extent that even if a woman's social position necessitates her having a servant and she herself does not have the means to pay for such a person, the salary of the aforementioned servant is upon her husband. These responsibilities are on the shoulders of men, whereas we see that women are exempted from paying any living expenses, including their own – whether clothes or food. Therefore and in all practicality, it is (the) woman who has more of a portion of wealth than (the) man..."

"... Consider, for example, that the sum total of all the wealth of the world is 30 billion pounds. Say that this wealth was distributed by means of inheritance between men and women. From this amount of money, 20 billion pounds went to men and 10 billion went to women. Since women do not have to spend on themselves, they can save that 10 billion and become partners with the men in the remaining 20 billion (since the portion of men is spent on women and children). So, half of the portion of men, which is 10 billion pounds goes to women. When we add this amount to the portion that the women saved from before, their sum total becomes 20 billion pounds..."

"...In the end, it is possible for us to say that if it is true that the expenses of the woman are upon the shoulders of the man, then what use does woman have in hoarding a large amount of wealth? We can answer by saying that the dowry and inheritance of the woman is like a savings that is for her future, in case she separates from her spouse or her spouse dies. It is so she can lead a comfortable and respected life in case such events happen.

But the reason that the expenses of the woman is upon the man is so that she can, without any sort of mental anxiety, raise good and pious children. In this way the family, which is the cornerstone of society, will be filled with warmth and love..."

Grandson(s) and granddaughter(s)

In the absence of a deceased's son(s) and daughter(s), his/her grandson(s) and granddaughter(s) through son(s) will "jump" and inherit all the rights and privileges of the substantive son(s) and daughter(s) respectively. Therefore,

1. A grandson inherits the whole estate if he is the only heir or becomes a residuary in the presence of other heirs.
2. Two or more grandsons share equally the whole estate if they are the only heirs or share equally the residue if other heirs are present.
3. A granddaughter takes $\frac{1}{2}$ of the estate, while two or more granddaughters share equally $\frac{2}{3}$ of the estate in the presence or absence of other heirs.
4. A combination of grandson(s) and granddaughter(s) in whatever form share the whole estate if they are the only heirs or share the residue when other heirs exist in the ratio of 2 to 1, i.e. each grandson takes twice the share of each granddaughter.

Daughter(s) and granddaughter(s)

Note that even though a granddaughter through a son acts like a daughter in the absence of her father, this right is limited in the presence of an actual daughter, because the maximum share of daughters, granddaughters or a combination of daughters and granddaughters is $\frac{2}{3}$ of the estate. Thus, whenever daughter(s) and granddaughter(s) are inheriting together, the former get their full shares while the latter distribute the residue of $\frac{2}{3}$ equally if any. As a result,

1. One daughter, one granddaughter: Daughter gets $\frac{1}{2}$; granddaughter gets $\frac{1}{6}$, making $\frac{2}{3}$.
2. One daughter, two or more granddaughters: Daughter gets $\frac{1}{2}$; granddaughters share $\frac{1}{6}$ equally.
3. More than one daughter, any number of granddaughters: Daughters share $\frac{2}{3}$ equally; granddaughters get nothing.

This is the application of rules 2 and 3 of exclusion i.e. a daughter does not exclude grandchildren [children of her late brother(s)] and two or more daughters exclude strictly granddaughters respectively.

Daughter(s) and grandson(s)

We know that sons and daughters share the whole estate or its residue in a ratio of 2 to 1. In the absence of a son, the grandson through son will “jump” and replace him but he does not have the same “power” as the son if he is inheriting together with substantive daughter(s). He takes the residue after the daughter(s) and other heirs if present have received their shares. Thus,

1. One daughter, one grandson: Daughter receives $\frac{1}{2}$; grandson receives the residue. Residue here means $\frac{1}{2}$ in the absence of other heirs or whatever is left when other heirs are present and have gotten their shares.
2. One daughter, more than one grandson: Daughter gets $\frac{1}{2}$; grandsons share residue equally.
3. More than one daughter, one grandson: Daughters share $\frac{2}{3}$ equally; grandson is given the residue.
4. Two or more daughters, two or more grandsons: Daughters receive and share $\frac{2}{3}$ proportionately; grandsons share the residue equally.

Daughter(s), grandson(s) and granddaughter(s)

As mentioned earlier, grandson(s) and granddaughter(s) divide the whole estate or its residue in a ratio of 2 to 1. But when inheriting along with substantive daughter(s), they will share the residue of the estate after the daughter(s) and other heirs (if present) have received their shares. Hence,

1. A daughter, grandson(s), and granddaughter(s): Daughter receives $\frac{1}{2}$; grandson(s) and granddaughter(s) share the residue in a ratio of 2 to 1.
2. Two or more daughters, grandson(s) and granddaughter(s): Daughters get $\frac{2}{3}$ which they will share equally; grandson(s) and granddaughter(s) share the residue in a ratio of 2 to 1.

This is the application of rule 4 of exclusion which says that two or more daughters do not exclude grandchildren comprising of at least a grandson.

Son(s) and grandchildren

A son, sons or combination of son(s) and daughter(s) will inherit the whole estate or the whole residue; therefore there will be no any leftover for grandchildren to inherit from. This means that grandchildren get nothing. Recall rule 1 of exclusion: a son excludes all grandchildren.

INHERITANCE OF SPOUSES

Inheritance of spouses depends on the presence or absence of:

- Son(s)
- Daughter(s)
- Male descendants
- Female descendants

Let's call this group of heirs "beta." Male descendants refer to grandson through son, great-grandson through grandson through son, etc., while female descendants are granddaughter through son, great-granddaughter through grandson through son, and so on. Remember that granddaughter through daughter is a non-heir; great-granddaughter through grandson through daughter is a non-heir; likewise great-granddaughter through granddaughter through son is also a non-heir.

Husband

1. He receives half ($\frac{1}{2}$) of his late wife's estate if she has no surviving member of beta with him, from a previous marriage or any circumstance that legalises a child to inherit from his mother.
2. The husband is entitled to one-quarter ($\frac{1}{4}$) of his late wife's estate if she leaves behind at least one member of beta with him, from a previous marriage or any circumstance that legalises a child to inherit from his mother.

Supposing a woman has a child outside wedlock, gets married and eventually passes on without a legitimate child, the husband will inherit $\frac{1}{4}$ of her estate because the child is recognised by Shari'ah; though other factors have to be considered like difference of religion and so on. We will like to re-emphasise that sexual relations between unmarried individuals is forbidden in Islam. As a result, both parties are to be punished as appropriate. Nevertheless, the child that results is as clean and innocent as any legitimate child.

Wife

1. The share of a wife from her late husband's estate if he has no surviving member of beta with her or from a previous marriage is $\frac{1}{4}$. Two, three or four wives are to share the $\frac{1}{4}$ equally.
2. If the husband has at least one surviving member of beta with the wife or from a previous marriage, she receives one-eighth (1/8). Two, three or four wives share the 1/8 equally.

INHERITANCE OF PARENTS

Father

1. He inherits the whole estate of his son or daughter if he is the only heir.
2. He gets one-sixth (1/6) of the estate if the deceased leaves behind
 - Son(s)
 - Male descendant(s); or any of these combination of heirs:
 - Son(s) and daughter(s).
 - Daughter(s) and male descendant(s).
 - Male and female descendants.
3. The father inherits 1/6 of the estate PLUS the residue in the presence of daughter(s), female descendants(s) or a combination of daughter(s) and female descendant(s).

The rationale behind giving him the residue is that females do not exhaust the estate, hence there is likely to be left-over after all heirs have gotten their shares. But exclusive males or combination of males and females as in (2) above inherit the whole residue, thus, the father receives just 1/6.

Mother

The mother's share depends on the presence or absence of a set of heirs we shall refer to as "gamma." It comprises of:

- Son(s)
 - Daughter(s)
 - Male descendant(s)
 - Female descendant(s)
 - Two or more full brothers or sisters
 - Two or more consanguine brothers or sisters
 - Two or more uterine brothers or sisters
 - A full brother and a full sister
 - A consanguine brother and a consanguine sister
 - A uterine brother and a uterine sister
1. The mother receives one-third (1/3) of her son's/daughter's estate if he/she does not leave behind any member of gamma.
 2. She gets 1/6 of the estate in the presence of any member of gamma.

By "any member" we mean at least one out of the ten classes listed above. Note that one son, one daughter, one male descendant and one female descendant each makes a class, but a single brother or a single sister of whatever kind (full, consanguine or uterine) does not make a class.

Secondly, the mere presence of two or more brothers or sisters relegates mother from 1/3 to 1/6 EVEN IF THEY ARE EXCLUDED. For instance, a man passes on and leaves behind a wife, mother, father and two full sisters. How will his estate be distributed? The wife receives $\frac{1}{4}$. Mother should have gotten 1/3 but full sisters will partially exclude her to 1/6. Incidentally, father excludes full sisters (rule 18), meaning that the remaining heirs are mother and father. Now, since the sisters are not inheriting, will mother be entitled to 1/3? No, she still gets 1/6 because the rule says “in the presence of any member of gamma,” not “when any member of gamma is inheriting along with her.” The residue then goes to the father.

Let's assume the deceased leaves behind a brother and a sister, two brothers or two sisters that are not of the same kind such as full and consanguine, uterine and full or similar combination. Will his/her mother still be excluded from 1/3 to 1/6? Definitely, even if one excludes the other. Supposing a woman is survived by her husband, mother, full brother and consanguine sister; $\frac{1}{2}$ of the estate goes to the husband and mother receives 1/6 due to the presence of two siblings even though full brother excludes consanguine sister. The residue is given to the full brother (to be discussed in a moment).

3. In extraordinary cases called '*Umariyyataini*', mother inherits 1/3 of the residue. This shall be discussed in chapter eight (special cases).

INHERITANCE OF GRANDPARENTS

Grandfather

Call to mind that paternal grandfather is the one that inherits. Maternal grandfather is a non-heir. In the absence of a deceased's father, his/her grandfather replaces the father. If the grandfather is also absent great-grandfather takes the place of the father. In his absence also, the great-great-grandfather if alive (but I wonder if he will) “jumps down” and inherits from the deceased. Though according to Imam Malik, only two levels of grandparents are entitled to inherit i.e. grandfather and great-grandfather, so great-great-grandfather and his descendants are non-heirs. But the difference of opinion here is insignificant since the probability that great-great-grandfather will inherit is very minimal because first, he has to be alive; and secondly, father, grandfather and great-grandfather all have to be absent. Consequently being considered as an heir or non-heir practically makes no difference. Hence, like father, the grandfather

1. Inherits the whole estate if he is the only heir.
2. Receives 1/6 in the presence of son(s), male descendant(s) or a combination of son(s) and daughter(s), male descendant(s) and daughter(s) or male and female descendant(s).

3. Gets $\frac{1}{6}$ + residue in the presence of daughter(s), female descendant(s) or a combination of the two.

Recall that father totally excludes full and consanguine brothers/sisters (rules 17 & 18) but grandfather do not have the ability to do that according to the more popular view held by Jurists. Therefore in this context, there are two possibilities:

1. Grandfather inheriting along with full or consanguine brothers/sisters only, i.e. they are the only heirs, no other heir is present. Here, grandfather has two choices:
 - a) $\frac{1}{3}$ of the estate.
 - b) *Muqasama* (sharing).

This means that he shares the estate together with full or consanguine brothers/sisters as if he were one of them. Thus, he will be considered as a full brother in the presence of full brothers, full sisters or a combination of full brothers and sisters. Likewise, he will be counted as a consanguine brother if consanguine brothers, consanguine sisters or a combination of consanguine brothers and consanguine sisters are inheriting. In a situation whereby a combination of full(s) and consanguine(s) are inheriting which is only possible when the deceased leaves behind one full sister and one or more consanguine sisters (to be discussed shortly), grandfather acts as a full brother.

Grandfather has the free will to choose between these two options. And naturally, he is expected to pick the one that gives him a larger share of the estate depending on the circumstance. Details in chapter seven.

2. Inheritance of grandfather along with full or consanguine brothers/sisters in the presence of other heirs.

These “other heirs” must not include father, son(s) or male descendant(s) because father excludes both grandfather on one hand as well as full and consanguine brothers/sisters on the other while son(s) and male descendant(s) exclude full and consanguine brothers/sisters. In this scenario, grandfather has three options:

- a) $\frac{1}{6}$ of the whole estate.
- b) $\frac{1}{3}$ of the residue (after other heirs have received their shares).
- c) *Muqasama* (sharing).

He picks whichever is the most favourable to him. Notice that uterine brothers and sisters do not inherit together with grandfather because he excludes them (rule 19).

Grandmother

In the absence of mother, either grandmother i.e. paternal, maternal or both takes her place and inherit from the deceased. As a result,

1. Paternal grandmother gets 1/6 of the estate in the presence or absence of other heirs.
2. Maternal grandmother receives 1/6 of the estate in the presence or absence of other heirs.
3. Both paternal and maternal grandmothers share 1/6 equally in the presence or absence of other heirs.

Let's shed more light on 1 and 2 above. When paternal grandmother is the only surviving heir, she gets 1/6 of the estate. She receives the same share (1/6) in the presence of other heirs which must not include maternal grandmother, otherwise they are to share the 1/6 equally (3 above). Likewise if maternal grandmother is the only heir, she is given 1/6 of the estate. When she is inheriting along with other heirs not including paternal grandmother, she receives the same 1/6. Consider the table below:

	Class 1	Class 2	Class 3
	Mother	Father	
Level 1	Mat GM (a)	Pat GM (d)	Pat GF
Level 2	Mat GGM (b)	Pat GGM (e)	Pat GGM (g)
Level 3	Mat GGGM (c)	Pat GGGM (f)	Pat GGGM (h)

Where Mat = Maternal

Pat = Paternal

GM = Grandmother

GF = Grandfather

GGM = Great-grandmother

GGGM = Great-great-grandmother

Using the table to expand rules 1, 2 and 3 above, when BOTH level 1 grandmothers are absent, a single surviving level 2 grandmother is given 1/6 of the estate. Two level 2 grandmothers share 1/6 equally and supposing the 3 of them are present, they still share 1/6 equally. Similarly, in the absence of all levels 1 and 2 grandmothers, one surviving level 3 grandmother inherits 1/6. Two of them share 1/6 equally and if all 3 are alive, they are given 1/6 to share in equal proportions.

As stated earlier, Imam Malik believes that only two levels of grandparents are rightful heirs, thus according to him, level 3 grandmothers will not inherit, but this is contrary to the opinion of most Jurists who did not specify a limit to the level of ascendants. Secondly, Malik considers paternal great-grandmother through paternal grandfather (i.e. g) as a non-heir. This also conflicts with the view of eminent companions like Zaid ibn Thabit, 'Abdullahi ibn 'Abbas and Jurists of later times including Abu Hanifa.

Nevertheless, examining the two opinions, we may conclude that practically the divergence is negligible given that it is quite rare to see level 2 grandmothers inherit from a deceased not to talk of level 3 grandmothers. To illustrate this, how many of us grew up to see our great-grandmothers alive? And what is the probability that she will still be alive to witness our death considering that our mothers and grandmothers have earlier passed on which will enable her to take the place of our mothers and inherit from us? Maybe zero point zero zero zero something (0.000...), an insignificant figure. Therefore it is quite irrelevant whether paternal great-grandmother(s) and level 3 grandmothers are listed among rightful heirs or not.

The general principle of exclusion is that heirs closer to the deceased exclude those that are farther. That is why a son excludes grandson and mother excludes grandmother for example. Now, among the grandmothers the same principle applies. This brings us to...

Rule 22a: A nearer grandmother excludes a farther grandmother ON EITHER SIDE.

Supposing in level 1 paternal grandmother passes on before the deceased, the surviving maternal grandmother in level 1 will exclude all grandmothers (both paternal and maternal) in level 2. That is what is meant by “either side.” Hence she receives 1/6 of the estate. Similarly, in the absence of maternal grandmother, paternal grandmother will do the same. This is the opinion of Imams Abu Hanifa and Ahmad ibn Hanbal.

Rule 22b: A nearer maternal grandmother excludes farther grandmothers on either side but a paternal grandmother DOES NOT exclude a farther maternal grandmother.

This is the view of Imams Malik and As-Shafi'i. So as explained above, in the absence of paternal grandmother, her maternal counterpart in the same level will exclude both maternal and paternal grandmothers at a higher level, thus she gets 1/6 of the estate. The difference here is that if maternal grandmother in level 1 is absent, paternal grandmother in level 1 (d) will exclude her own mother (e) but cannot exclude maternal grandmother in level 2 (b). As a result, they (d and b) will share 1/6 equally. This is the limit according to Malik because level 3 grandmothers are non-heirs. But if we are to continue, assuming both level 1 grandmothers and maternal grandmother in level 2 are absent, the two paternal grandmothers in level 2 (e and g) will exclude their mothers (f and h) but will not exclude level 3 maternal

grandmother (c) if she is alive. Thus the three of them (e, g and c) will share 1/6 equally.

INHERITANCE OF SIBLINGS

Uterine brother

1. He receives 1/6 of the estate when alone or in the presence of other heirs who do not exclude him.

Son, grandson (or his descendant), daughter, granddaughter through a son, father and paternal grandfather (or his ascendant) EACH excludes uterine brother (rule 19).

2. Two or more uterine brothers share 1/3 of the estate equally.

Uterine sister

1. She is given 1/6 of the estate if she is the only heir or in the presence of other heirs who do not exclude her. Note that rule 19 also applies to her.
2. Two or more uterine sisters share 1/3 of the estate equally.

Uterine brother(s) and sister(s)

A combination of uterine brother(s) and sister(s) share 1/3 of the estate **EQUALLY**. The general rule of a male having double the share of a female does not apply to them.

The uterine sibling we recall has the same mother but different father with the deceased. Similarly, any individual that will inherit from his mother only is considered a uterine. For instance, a woman ‘W’ has a son ‘A’ outside wedlock. (Islam does not encourage this. This is just a hypothetical example IN CASE it happens; nevertheless, appropriate punishment applies). She then marries ‘X’ and gave birth to a daughter ‘B’. Unfortunately, ‘X’ denies her paternity through *li'an*. The marriage did not work out, so they divorced. Later, she marries ‘Y’ who already has a wife ‘Z’ with a son, ‘P’. As the second wife, ‘W’ is blessed with two daughters, ‘C’ and ‘D’. So, what happens if:

- a) ‘Y’ dies?

His two wives, ‘Z’ and ‘W’ will share 1/8 equally while the children, ‘P’, ‘C’ and ‘D’ are to distribute the residue in a ration of 2 to 1 to 1 (2:1:1).

- b) ‘W’ passes on when the status quo remains (i.e. ‘Y’ is absent)?

Her four children, ‘A’, ‘B’, ‘C’ and ‘D’ will share her estate in a ratio of 2 to 1 to 1 to 1 (2:1:1:1).

- c) ‘C’ dies (given that ‘Y’ and ‘W’ are absent)?

Her uterine brother and sister, 'A' and 'B' gets 1/3 of the estate which they will share equally; her full sister 'D' is given 1/2 and the residue goes to 'P', the consanguine brother (Inheritance of full sister and consanguine brother shall be discussed shortly).

- d) 'P' is absent?

His mother 'Z' inherits 1/3 and his surviving consanguine sister 'D' is given 1/2.

- e) 'A' passes on?

'B' and 'D', his uterine sisters share 1/3 equally.

Full brother

1. He inherits the whole estate if he is the only heir
2. In the presence of other heirs who do not exclude him, he receives the residue.
3. Two or more full brothers share the whole estate equally if they are the only heirs or distribute the residue equally in the presence of other heirs.

Son, grandson or his descendant and father each excludes full brother (rules 15, 16, 17).

Full sister

Like a daughter, she is entitled to:

1. 1/2 of the estate when alone or in the presence of other heirs who do not exclude her.
2. Two or more full sisters share 2/3 of the estate equally if they are the only heirs or in the presence of other heirs who do not exclude them.
The same heirs that exclude full brother are the ones that exclude full sister.
3. When a full sister is inheriting along with daughter(s), granddaughter(s) through son(s) or a combination of daughter and granddaughter(s) through son(s), she receives residue of the estate. In this situation, she acts as a full brother and excludes whomsoever he excludes.
4. Two or more full sisters inheriting along with daughter(s), granddaughter(s) through son(s) or a combination of daughter and granddaughter(s) through son(s), share the residue in equal proportions.

Note that granddaughter(s) can only inherit along with a single daughter in view of the fact that they cannot exhaust the 2/3 maximum share of daughters. Hence, in the presence of two or more daughters who receive

2/3, granddaughter(s) will be excluded. That is why the combinations in 3 and 4 above are both that of (a single) daughter and granddaughter(s).

Full brother(s) and full sister(s)

1. A combination of full brother(s) and full sister(s) share the whole estate in a ratio of 2 to 1 if they are the only heirs.
2. In the presence of other heirs who do not exclude them, they share the residue in the same proportion (i.e. 2:1).

Consanguine brother

1. He inherits the whole estate if he is the only heir.
2. In the presence of other heirs who do not exclude him, he receives the residue.
3. Two or more consanguine brothers share the whole estate equally if they are alone or distribute the residue equally when other heirs who do not exclude them are present.

Remember that any heir that excludes full brother automatically excludes all other members of alpha which consanguine brother is a member. Thus, son, grandson or his descendant and father each excludes consanguine brother. In addition, full brother excludes consanguine brother (rule 8).

Consanguine sister

1. When she is the only heir or in the presence of other heirs who do not exclude her, a single consanguine sister gets $\frac{1}{2}$ of the estate while two or more consanguine sisters inherit 2/3.
A consanguine sister is excluded by those who exclude consanguine brother. She is also excluded by two or more full sisters (rule 6). One full sister does not exclude her (rule 5).
2. When inheriting along with daughter(s), granddaughter(s) through son(s) or a combination of daughter and granddaughter(s), a consanguine sister is given the residue of the estate. Two or more consanguine sisters share the residue equally.

Consanguine brother(s) and consanguine sister(s)

1. A combination of consanguine brother(s) and consanguine sister(s) distribute the whole estate in a proportion of 2 to 1 when they are the only heirs.
2. In the presence of other heirs who do not exclude them, they receive the residue and share in a ratio of 2 to 1.

Full sister(s), consanguine brother(s) and consanguine sister(s)

In the presence or absence of other heirs, whenever they are not excluded, the following apply:

1. One full sister, one consanguine brother: Full sister = $\frac{1}{2}$; consanguine brother = residue. Residue means $\frac{1}{2}$ in the absence of other heirs or the leftover after other heirs have received their shares.
2. One full sister, more than one consanguine brother: Full sister = $\frac{1}{2}$; consanguine brothers share the residue equally.
3. One full sister, one consanguine sister: Full sister = $\frac{1}{2}$; consanguine sister = $\frac{1}{6}$.
4. One full sister, more than one consanguine sister: Full sister = $\frac{1}{2}$; consanguine sisters share $\frac{1}{6}$ equally.
5. More than one full sister, one consanguine brother: Full sisters = $\frac{2}{3}$; consanguine brother = residue.
6. More than one full sister, more than one consanguine brother: Full sisters = $\frac{2}{3}$; consanguine brothers share the residue equally.
7. More than one full sister, any number of consanguine sisters: Full sisters = $\frac{2}{3}$; consanguine sisters get nothing.
8. One full sister, any number of consanguine brothers, any number of consanguine sisters: Full sister = $\frac{1}{2}$; consanguine brothers and sisters share the residue in a ratio of 2 to 1.
9. More than one full sister, any number of consanguine brothers, any number of consanguine sisters: Full sister = $\frac{2}{3}$; consanguine brothers and sisters share the residue in a 2 to 1 ratio.

Full brother, consanguine brother(s), consanguine sister(s)

Full brother excludes consanguine brother (rule 8) and by extension, consanguine sister. So, in the presence of at least a full brother, whether he is inheriting alone or along with full sister, consanguine brother(s) and sister(s) receive nothing.

CHAPTER FOUR

RESIDUARIES ('ASABAH)

These are heirs who:

1. Inherit the whole estate when they are the only heirs but in the presence of other heirs who do not exclude them, they receive the residue.
2. When they are the only heirs, they are given $\frac{1}{2}$ or $\frac{2}{3}$ of the estate, but in the presence of some “specific” heirs, they
 - a) Share the residue with those “specific” heirs, or
 - b) Receive the residue after some “specific” heirs [different from those in (a)] have gotten their shares of the estate.

In other words, there are 3 categories of residuaries:

- i) Residuaries by themselves (i.e. those that satisfy 1 above).
- ii) Residuaries by another (i.e. those that satisfy 2a above).
- iii) Residuaries with another (i.e. those that satisfy 2b above).

Residuaries by themselves ('Asabah bin-Nafs)

These are:

- a) Son
- b) Grandson or his descendant
- c) Father
- d) Grandfather or his ascendant
- e) Full brother
- f) Consanguine brother
- g) Full brother's son or his descendant
- h) Consanguine brother's son or his descendant
- i) Full paternal uncle
- j) Half paternal uncle
- k) Full paternal uncle's son or his descendant
- l) Half paternal uncle's son or his descendant

We have looked at inheritance of (a) – (f). The same ruling applies to other members of the set i.e. they inherit the whole estate or the residue when other heirs who do not exclude them are present. Of course, son and father cannot be excluded by any heir. Likewise, grandson (or his descendant) and grandfather (or his ascendant) in the absence of son and father respectively cannot be excluded.

Now, there seems to be a problem. If two heirs (of different classes) listed above are present and both are eligible to inherit, will they share the whole estate or residue among themselves? No, the heir occupying a higher

position in the hierarchy takes the residue, while the second one is given his due share of the estate.

For example, a man leaves behind a wife, two sons and father. How will his estate be distributed? The wife is given 1/8. This is clear. But the two sons on one hand and the father on the other hand are both residuaries by themselves. However, since the sons are above the father (i.e. they occupy the 1st position while the father comes 3rd), he (the father) is given 1/6 of the estate while the two sons share the residue equally.

Supposing the surviving heirs were to be grandson, grandfather and consanguine brother; what happens? We know that grandfather can inherit along with a consanguine brother but grandson excludes the latter. As a result, grandfather receives 1/6 while grandson gets the residue given that he is above grandfather in hierarchy.

Residuaries by another ('Asabah bil-ghair)

This category has 4 heirs. They are:

- a) Daughter
- b) Granddaughter through son
- c) Full sister
- d) Consanguine sister

Each is entitled to ½ of the estate if alone while two or more share 2/3 of the estate equally if they are not excluded. Note that daughter cannot be excluded. Now, if any of these listed heirs is inheriting along with her male counterpart (i.e. son, grandson, full brother and consanguine brother respectively), she is no longer given ½ or 2/3 as the case may be. She becomes a residuary with the male. This has already been discussed in the last chapter under the subheadings: son(s) and daughter(s), grandson(s) and granddaughter(s), full brother(s) and full sister(s) as well as consanguine brother(s) and consanguine sister(s).

Residuaries with another ('Asabah ma'al ghair)

These are full sister and consanguine sister. In the presence of daughter(s), granddaughter(s) through son(s) or a combination of daughter and granddaughter(s), full sister or consanguine sister (if not excluded) will abandon her ½ (if only one) or 2/3 (if more than one) to become a residuary.

For instance, the heirs of a deceased are three daughters, two granddaughters through son, one full sister and a grandmother. How will the estate be allotted to them? The three daughters will share 2/3 equally, grandmother gets 1/6 while full sister is given the residue. The two granddaughters are excluded (rule 3).

Assuming a grandson is added to the heirs, daughters will still get their 2/3, grandmother retains her 1/6, but now the granddaughters will be the residuaries due to the presence of grandson. So, the three of them (i.e. grandson and two granddaughters) will share the residue in a ratio of 2 to 1 to 1. This implies that full sister is excluded (rule 18).

Note that if the estate gets exhausted such that there is no left-over, residuaries receive nothing. Exceptions to this rule are son and father who are “basic heirs.” NO circumstance will arise in which the duo will become “spectators.” In their absence, grandson (or his descendant) and grandfather (or his ascendant) respectively replaces them to become basic heirs.

CHAPTER FIVE

PARTIAL EXCLUSION

There are two types of exclusion: total and partial. As defined earlier, total exclusion means preventing a rightful heir from getting any share of a deceased's estate due to the presence of another heir. We looked at 22 rules of (total) exclusion. Now, partial exclusion is the reduction of an heir's share of the estate due to the presence of another heir. Such reduction can be

- a) From a higher share to a lower share.
- b) From the whole estate to a share.
- c) From a share to residue.
- d) From whole estate to residue.

Thus, from our discussion so far, the following can be deduced:

Partial exclusion (P.E) rule 1: Son, daughter, male descendant and female descendant each excludes husband from $\frac{1}{2}$ to $\frac{1}{4}$.

P.E rule 2: Son, daughter, male descendant and female descendant each excludes wife/wives from $\frac{1}{4}$ to $\frac{1}{8}$.

P.E rule 3: Son, daughter, male descendant and female descendant each excludes mother from $\frac{1}{3}$ to $\frac{1}{6}$.

P.E rule 4: Two or more brothers and/or sisters of the same kind or a "combination of kinds" excludes mother from $\frac{1}{3}$ to $\frac{1}{6}$.

P.E rule 5: Son, male descendant or a combination of son and daughter, daughter and male descendant as well as male and female descendants each excludes father, grandfather or his ascendant from inheriting the whole estate to $\frac{1}{6}$.

P.E rule 6: Daughter, female descendant or a combination of daughter and female descendant each excludes father, grandfather or his ascendant from having the whole estate to $\frac{1}{6}$ plus the residue (if any).

P.E rule 7: A (single) daughter excludes granddaughter from $\frac{1}{2}$ to $\frac{1}{6}$.

P.E rule 8: A daughter excludes two or more granddaughters from $\frac{2}{3}$ to $\frac{1}{6}$. Remember that two or more daughters totally exclude strictly granddaughters.

P.E rule 9: A daughter or female descendant excludes full or consanguine sister from $\frac{1}{2}$ to residue.

P.E rule 10: A daughter or female descendant excludes two or more full or consanguine sisters from $\frac{2}{3}$ to residue.

P.E rule 11: A full sister excludes consanguine sister from $\frac{1}{2}$ to $\frac{1}{6}$.

P.E rule 12: A full sister excludes two or more consanguine sisters from $\frac{2}{3}$ to $\frac{1}{6}$.

P.E rule 13: Father, mother, husband and wife each excludes son, male descendant or a combination of male and female descendants from inheriting the whole estate to residue.

P.E rule 14: Father, mother, husband and wife each do not exclude daughter or female descendant from $\frac{1}{2}$; likewise two or more daughters or female descendants are not excluded from $\frac{2}{3}$ by them unless the daughter(s) or female descendant(s) is/are inheriting along son or male descendant respectively in which case, they will become residuaries.

CHAPTER SIX

INHERITANCE ARITHMETIC (“INHERITHMETIC”)

The interesting aspect of inheritance is the arithmetic component. We say arithmetic NOT mathematics because the operations involved are addition, subtraction, multiplication and division only. So even those who dislike mathematics I believe do not find these four basic operations tasking.

In any inheritance problem, the aim is to determine the MINIMUM BASE NUMBER that will enable the estate to be distributed among the heirs such that each will get his/her PORTION, WITHOUT a remainder or decimal. To start with, let's define some terms (as used in this text):

1. Share: - the fraction of the estate an heir is entitled to inherit such as $\frac{1}{2}$, $\frac{1}{8}$, $\frac{2}{3}$ and so on.
2. Portion: - the number of segments of an estate an heir will receive. This MUST NECESSARILY be a whole number, not a fraction or number with decimal.
3. Base number (*aslul mas-ala*): - as stated above, it's a WHOLE NUMBER that facilitates the distribution of the estate in accordance with the shares of ALL the heirs and also generates the portion of each.

A numeric example will clarify the concepts. Assuming a father gives his 3 children, ‘A’, ‘B’ and ‘C’ £120 to share in proportions of $\frac{1}{3}$, $\frac{1}{6}$ and $\frac{1}{2}$ respectively, how much will each child receive? Literally, the question is saying that £120 should be divided into 3, then ‘A’ gets 1 part out of the 3. Then £120 should be divided by 6, from which ‘B’ receives 1 part out of 6. Similarly, ‘C’ is entitled to 1 out of 2 parts of £120. Therefore,

‘A’ receives $\text{£}120 \div 3 = \text{£}40$

‘B’ gets $\text{£}120 \div 6 = \text{£}20$

‘C’ is given $\text{£}120 \div 2 = \text{£}60$

To check whether we are correct, we add up what each child receives: $\text{£}40 + \text{£}20 + \text{£}60 = \text{£}120$. This is how a deceased's estate is distributed. But practically, the estate is made up of houses, cars, clothes, books, etc., and in most cases the total worth is not available. Therefore for convenience, we determine a number which can be divided by each of the DENOMINATORS of the shares under consideration. Note that every ‘fraction’ has a NUMERATOR (number on top of the slash) and a denominator (number at the bottom of the slash). In this case, 1, 1 and 1 are the numerators of $\frac{1}{3}$, $\frac{1}{6}$ and $\frac{1}{2}$; while 3, 6 and 2 are the denominators. Now, what number can be divided by 3, 6 and 2 WITHOUT a remainder or decimal?

Let's assume 3. So,

$$3 \div 3 = 1 \quad 3 \div 6 = 0.5 \quad 3 \div 2 = 1.5$$

It's clear 3 is not the number we are looking for because when divided by 6 and 2, the solutions have decimals. What if we consider 6 and 12?

$$\begin{array}{lll} 6 \div 3 = 2 & 6 \div 6 = 1 & 6 \div 2 = 3 \\ 12 \div 3 = 4 & 12 \div 6 = 2 & 12 \div 2 = 6 \end{array}$$

Both 6 and 12 give us good solutions (i.e. with no decimals), so which one do we choose? The minimum. Consequently, our base number in this problem is 6. What this means is that the estate should be divided into 6 portions. 'A' takes 2 ($1/3$ of 6), 'B' gets 1 ($1/6$ of 6) and 'C' receives 3 ($1/2$ of 6). So, differentiating between SHARE and PORTION, the shares of 'A', 'B' and 'C' are $1/3$, $1/6$ and $1/2$ respectively; while their portions are 2, 1 and 3 respectively. Hopefully the definition of portion as the "number of segments of an estate an heir will receive" now makes more sense.

4. Number of heads: - this is the number of heirs IF they are of the same gender. Hence, the number of heads of 2 sons is 2; the number of heads of 9 granddaughters is 9. As simple as that. But if the heirs are of mixed gender, a male has "2 heads" while a female has 1. This is because a male gets double the share of a female. So, the number of heads of 3 full brothers and 4 full sisters is 10; likewise the number of heads of 12 sons and 5 daughters is 29.
5. Category: - a single heir makes a category if he/she inherits a share of the estate alone while 2 or more heirs make a category if they are to distribute a share of the estate among themselves. For instance, if the surviving heirs of a deceased are wife and son, we have 2 categories of heirs since the wife has a share ($1/8$) and the son also has a share (residue). Wife, father and 2 daughters; this is 3 categories given that the 2 daughters will share $1/2$ of the estate equally. Husband, 2 consanguine brothers, 4 consanguine sisters; this is 2 categories. Consanguine brothers and sisters will share the residue in a ratio of 2 to 1. Grandfather, 3 daughters, grandson and 5 granddaughters; how many categories? 3.

Procedure of solving inheritance problems

1. Determine the "actual" heirs.

Not all the 15 male and 9 female heirs we listed will inherit from a deceased. Definitely, some will be excluded by others. As a result, the first task is to know who excludes who. Supposing a woman is survived by her husband, 2 daughters, 4 granddaughters, a full sister, 3 consanguine brothers, 2 full uncles, 5 full uncle's sons and a full uncle's daughter; only her husband, 2 daughters and full sister are her "actual" heirs. Why? First, the full uncle's daughter is a non-heir. Husband and daughters are basic heirs. They cannot be excluded. But since the daughters are two, they will exclude

granddaughters, then full sister will inherit as a “residuary by another,” in which case, she acquires the rights and privileges of a full brother and as we said earlier, “she excludes whomsoever he excludes,” i.e. consanguine brothers, full uncles and their sons who are equally members of alpha (but below him in hierarchy).

2. Spell out the share of each heir.

Here, the rules of partial exclusion come to play. The husband is relegated from $\frac{1}{2}$ to $\frac{1}{4}$ by the daughters, likewise they make full sister to get residue (if any) as opposed to $\frac{1}{2}$ of the estate if they were absent, yet their share of $\frac{2}{3}$ remains intact. We can see how influential children are.

3. Determine the base number.

Now, consider the shares at hand. In this example, $\frac{1}{4}$, $\frac{2}{3}$ and residue. We ask a simple question: what whole number is there whose one-quarter and two-third are both whole numbers? Of course, there are so many of them. So our job is to find out the least or minimum of them all. If we randomly choose 20,

$$\frac{1}{4} \times 20 = 5 \quad \frac{2}{3} \times 20 = 13.33$$

Because $\frac{2}{3}$ of 20 is not a whole number, 20 is not a solution. Let's take 24.

$$\frac{1}{4} \times 24 = 6 \quad \frac{2}{3} \times 24 = 16$$

It seems 24 is what we are looking for. But is it the minimum? No, actually the minimum base number for this problem is 12. Thus,

$$\frac{1}{4} \times 12 = 3 \quad \frac{2}{3} \times 12 = 8$$

How did we know that it's 12? In other words, how do we determine the most appropriate base number without trial and error? There are standard rules for that which we shall be looking at shortly.

4. Generate the portion of EACH heir.

This is done by simply multiplying the base number by the share of each heir. We have already started it in step 3 above. Therefore,

Husband receives $12 \times \frac{1}{4} = 3$ portions

2 daughters get $12 \times \frac{2}{3} = 8$ portions

Full sister is given the residue which is 1 portion. That is, deduct 3 and 8 from 12, the remainder is 1 [$12 - 3 - 8 = 1$ or $12 - (3 + 8) = 1$].

What we have done is to ascertain the number of portions each CATEGORY of heir is entitled to; whereas the step requires us to find out the number of portions EACH heir will receive. This is quite easy. When a category consists of only one heir, he/she is given all the portions assigned to that category. Hence, husband being the only one in his category takes all the 3 portions allocated to his category. Similarly, full sister inherits the one portion assigned to her category.

But when a category has more than one heir, we divide the number of portions that category is entitled to by the number of heads of heirs in it so

as to know how many portions each person gets. This means that since both daughters make a category, we have to determine how many portions go to daughter ‘A’ and how many daughter ‘B’ will receive. Their number of heads is 2. Consequently,

$$8 \text{ portions} \div 2 \text{ heads} = 4 \text{ portions/head}$$

Accordingly, each daughter is given 4 portions. So the deceased’s estate is divided into 12 portions. Husband gets 3, each daughter inherits 4 and full sister receives the remaining 1. As simple as that!

Now, what happens if a category is made up of male and female heirs who are to distribute a share among themselves such as sons and daughters? Let’s answer the question using this quick example. A man dies leaving behind a wife, 3 sons and a daughter, how will his estate be shared among them?

Henceforth, we shall not bother ourselves mentioning ALL the relatives or heirs a deceased leaves behind. Only the “actual” heirs will be stated. Our assumption is that any heir not mentioned is either absent or have been excluded by at least one of those under consideration. In this instance, the man may actually have uncles, brothers, sisters, aunts, grandchildren and so on. But his children especially the sons have excluded all of them. Observe that son cannot exclude father and mother. Since they were not listed among the heirs, we suppose that they died before him, i.e. they are absent.

Step 2: The wife should have received $\frac{1}{4}$ of the estate but the children will partially exclude her to $1/8$. Again we assume that by now, the reader is conversant with the rules of partial exclusion. So we shall not be stating how we arrive at the shares of each heir. Anyway, the 3 sons and daughter will share the residue in a ratio of 2 to 2 to 2 to 1 respectively.

Step 3: The base number is 8. How we got this? Details shortly.

Step 4: Mother receives $8 \times 1/8 = 1$ portion

Children are given the remaining 7 portions ($8 - 1 = 7$).

Number of heads of 3 boys and 1 daughter = 7

Therefore, 7 portions \div 7 heads = 1 portion/head

Recall that males have “2 heads” while females have 1. Hence,

Son ‘A’: 2 heads \times 1 portion/head = 2 portions

Son ‘B’: 2 heads \times 1 portion/head = 2 portions

Son ‘C’: 2 heads \times 1 portion/head = 2 portions

Daughter: 1 head \times 1 portion/head = 1 portion

The same principle applies when we have combination of grandson(s) and granddaughter(s), full brother(s) and full sister(s), consanguine brother(s) and consanguine sister(s), etc.

Sometimes, the heirs that make up a category CANNOT share their portion of the estate because:

- a) It is NOT ENOUGH to go round, or
- b) After all heirs have received their portions, there is an EXTRA which will not be sufficient to go round.

For example, if 2 sons and 3 daughters are to share 6 portions of an estate,

Each son is to get 2 portions = 4 portions

Each daughter is entitled to 1 portion = 3 portions

Total number of portions required = 7, which is the same as their number of heads.

It is clear that the children cannot share 6 portions because if we go ahead, we will run into fractions or numbers with decimals which is not acceptable in inheritance. And as long as we want to stick with whole numbers, someone will be short-changed; either one of the daughters gets nothing or one of the sons is given 1 portion instead of 2. This is also not allowed EVEN IF the heirs by consensus accepts it or one of the heirs agrees to receive less or nothing. Remember that inheritance distribution is an act of worship and has to be done according to the dictates of Shari'ah.

Similarly, if the 2 sons and 3 daughters were to share 10 portions of the estate, all the children will get their complete portions but there will be extra 3 which will not go round. Had it been the extra were 7, they will redistribute it again among themselves so that each son will receive 4 portions (original 2 plus extra 2 redistributed), while each daughter gets 2.

In both instances (i.e. when number of portions is not enough or when there is an extra), the four steps enumerated above are insufficient. Additional steps are required to obtain a new base number. This brings us to the LEVELS OF INHERITANCE PROBLEMS.

Level 1: All categories of heirs are able to share their portions of the estate.

Level 2: One or two categories of heirs cannot share their portions of the estate.

Level 3: More than two categories of heirs cannot share their portions of the estate.

All inheritance problems will necessarily fall within these three levels. The beauty of it is that each level has distinct rules regarding how to obtain the base number. So, if one is able to determine what level a problem belongs to, the next thing is simply to apply the appropriate rule(s) and the portion of each heir will emerge.

LEVEL ONE

Level 1(a): One category of heir with no fixed share

Rule A: The number of heads of heirs is the base number

Example 1

Heirs	5 Consanguine brothers, 2 Consanguine sisters
Share	Whole estate
Base number	12
Portions	Each brother = 2; each sister = 1

The estate is divided into 12 portions (i.e. the base number). Each male is given 2 portions because he has “2 heads,” whereas each female receives 1 portion since she has “1 head.” Observe that step 4 in which the base number is multiplied by the share of the heir to generate his/her portion is not applicable here in view of the fact that the heirs have no specific shares. That necessitated the use of their number of heads.

Example 2

Heirs	3 sons
Share	Whole estate
Base number	6
Portions	Each son = 2

This is quite straight-forward. Just one thing. The principle that males have “2 heads” while females have 1 may not be relevant if the heirs are all male; in which case they can be considered as having “1 head” each so as to reduce the base number and by extension the number of portions the estate is divided into. Recall the definition of number of heads as, “the number of heirs if they are of the same gender.” As a result, the same problem can be solved like this;

Heirs	3 sons
Share	Whole estate
Base number	3
Portions	Each son = 1

Level 1(b): One category of heir with a fixed share

Rule B: Base number is the denominator of the share

Example 3

Heirs	2 daughters
Share	2/3
Base number	3
Portions	Each daughter = 1

Estate is divided into 3 portions. Each daughter is given 1; equivalent to her number of head. There will be 1 extra portion.

Example 4

Heirs	1 full sister
Share	$\frac{1}{2}$
Base number	2
Portions	1

Similar to example 3, estate is divided into 2 portions. Full sister takes 1 corresponding to her number of head. There is 1 extra portion.

Question: What happens to the extra? This has been answered earlier. There are 3 opinions of Jurists regarding this.

- a) The extra goes to the *bait-ul-mal* (public treasury).
- b) The heirs should redistribute the extra.
- c) It should be given to the cognates (relations whose connection to the deceased is traceable through the mother or female line) who are traditionally non-heirs.

Level 1(c): Two categories of heirs with one having a fixed share

Rule C: Base number is the denominator of share of the category with a fixed share

Example 5

Heirs	Wife	1 Son; 1 Daughter
Shares	$\frac{1}{4}$	Residue
Base number		4
Portions	1	Son = 2; Daughter = 1

Considering step 4 for both categories of heirs,

Wife: $4 \times \frac{1}{4} = 1$ portion

Son and daughter: Residue i.e. $4 - 1 = 3$ portions

Son has “2 heads” hence inherits 2 portions while daughter has “1 head” therefore is given 1 portion.

Example 6

Heirs	Mother	2 Full brothers; 1 Full sister
Shares	$\frac{1}{6}$	Residue
Base number		6
Portions	1	Each full brother = 2; full sister = 1

Mother: $6 \times \frac{1}{6} = 1$ portion

2 Full brothers and 1 full sister: Residue i.e. $6 - 1 = 5$ portions

The 5 portions are distributed among the full brothers and full sister in a ratio of 2 to 2 to 1 respectively.

LOWEST COMMON MULTIPLE (LCM)

This section is meant to review the same LCM we were taught in elementary Mathematics. You may wish to skip it if you think that you do not need it. For those of us that want to refresh our memories, the three concepts: lowest, common and multiple will be easier understood if explained in reverse order, i.e. multiple, common, lowest.

Multiple

Remember the times table?

$2 \times 1 = 2$	$3 \times 1 = 3$	$4 \times 1 = 4$
$2 \times 2 = 4$	$3 \times 2 = 6$	$4 \times 2 = 8$
$2 \times 3 = 6$	$3 \times 3 = 9$	$4 \times 3 = 12$
$2 \times 4 = 8$	$3 \times 4 = 12$	$4 \times 4 = 16$
$2 \times 5 = 10$	$3 \times 5 = 15$	$4 \times 5 = 20$

Now, the solutions under a particular number are its multiples. So,

Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, ...

Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, ...

Multiples of 4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, ...

Common

When considering the multiples of two numbers, the ones that appear for both are the “common multiples.” For instance,

Common multiples of 2 and 3 = 6, 12, 18, 24, 30, ...

Common multiples of 2 and 4 = 4, 8, 12, 16, 20, ...

This also applies for more than two numbers. Hence,

Common multiples of 2, 3 and 4 = 12, 24, 36, 48, 60, ...

Lowest

Of all the common multiples, which one is the smallest, minimum, least? Therefore,

Lowest common multiple of 2 and 3 = 6

LCM of 2 and 4 = 4

LCM of 2, 3 and 4 = 12

But, does that mean that to determine the LCM of 2, 3 or 4 numbers, all their multiples have to be listed, then the common ones are identified before picking the lowest? Certainly not. There are standard ways of finding the LCM. However, the method or technique to use depends on the RELATIONSHIP between the numbers under consideration. Generally, numbers are related as follows:

- i) Same e.g. 2 and 2, 3 and 3, 4 and 4.
- ii) One being a multiple of the other e.g. 2 and 4, 3 and 6, 4 and 8.
- iii) Neither (i) nor (ii) above e.g. 2 and 3, 4 and 5, 7 and 10.

When numbers are the same, their LCM is simply the number itself. For example, what is the LCM of 5 and 5?

Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, ...

Multiples of second 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, ...

Common multiples of both = 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, ...

As a result, the LCM of 5 and 5 = 5.

In the field of inheritance, this is called *TAMATHUL* i.e. the same.

If two numbers are related such that one is a multiple of the other, their LCM is the higher number. For instance, what is the LCM of 3 and 6?

Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, ...

Multiples of 6 = 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, ...

Common multiples of 3 and 6 = 6, 12, 18, 24, 30, 36, 42, 48, 54, ...

Thus, the LCM of 3 and 6 = 6.

Notice that 6 is a multiple of 3, which is why the common multiples of 3 and 6 are actually the multiples of 6! Hence, their LCM is simply the LCM of 6 since it is the higher number. Similarly, the LCM of 3 and 21 is 21 and the LCM of 6 and 42 is 42. This phenomenon is referred to as *TADAKHUL*, meaning multiple.

In a situation whereby the numbers under consideration are “neither,” i.e. are not the same and one is not a multiple of the other, the easiest way to determine their LCM is to MULTIPLY them. Example, what is the LCM of 2 and 3?

Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, ...

Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, ...

Common multiples of 2 and 3 = 6, 12, 18, 24, 30, 36, 42, ...

So, LCM of 2 and 3 = 6.

Likewise, LCM of 4 and 5 is 20 and LCM of 7 and 12 is 84. This is called *TABAYIN* in inheritance literature. I translate it as “parallel.” The fourth relationship between numbers shall be unveiled in due course. Meanwhile, knowledge of these relationships is the SECRET of determining the base number and by implication the whole of inheritance arithmetic! That is why a lot of space is being devoted to explain these basics.

Let’s complicate the problem. How do we find the LCM of 3 or more numbers? First, pick any 2 numbers and find their LCM. Call this LCM ‘X’. Next, pick a 3rd number. Determine the LCM of this 3rd number and ‘X’. Call this new LCM ‘Y’. Then find the LCM between ‘Y’ and the 4th number. And the process continues. The final LCM is the LCM of all the numbers. Example, what is the LCM of 2, 5 and 10? Considering the first two numbers 2 and 5, they are parallel, so multiply them to get the LCM. It’s 10. But this solution, 10 and the 3rd number, 10 are the same. And the LCM of similar numbers is that number. Thus, the LCM of 2, 5 and 10 is 10.

Alternatively, if 2 and 10 were considered first, 10 is a multiple of 2 so the higher number, 10 is chosen as the LCM. Incidentally, the solution, 10

is also a multiple of the 3rd number, 5. As a result the higher number, 10 is picked and that is the LCM of the 3 numbers. The LCM of the 3 numbers will equally be 10 if 5 and 10 are taken first. That is the beauty of Mathematics. It does not lie!

These methods of finding LCM are also applicable to fractions. But in their case, only the DENOMINATORS are considered. For instance, LCM of 2/3 and 1/3 = 3 Both denominators are the same.

LCM of 1/2 and 1/6 = 6 6 is a multiple of 2, so pick the higher one.
LCM of 1/4 and 1/7 = 28 4 and 7 are parallel, so multiply them.

Level 1(d): Two or more categories of heirs with at least two having fixed shares

Rule D: If the denominators of the shares are the same, that is the base number.

Example 7

Heirs	Husband	Sister
Shares	1/2	1/2
Base number	2	
Portions	1	1

Estate is divided into 2 portions. Each heir inherits 1.

Example 8

Heirs	Grandmother	Uterine sister	Consanguine brother
Shares	1/6	1/6	Residue
Base number	6		
Portions	1	1	4

Base number = 6; that is clear.

Grandmother: $6 \times 1/6 = 1$ portion

Uterine sister: $6 \times 1/6 = 1$ portion

Consanguine brother: $6 - 1 - 1 = 4$ portions

Rule E: When the denominator of one share is a multiple of the denominator of the other share, the higher one is the base number

Example 9

Heirs	Wife	Daughter	Half uncle
Shares	1/8	1/2	Residue
Base number	8		
Portions	1	4	3

Wife: $8 \times 1/8 = 1$ portion

Daughter: $8 \times 1/2 = 4$ portions

Half uncle: $8 - 1 - 4 = 3$ portions or $8 - (1 + 4) = 3$ portions

Example 10

Heirs	2 full sisters	Uterine brother	Grandmother
Shares	2/3	1/6	1/6
Base number	6		
Portions	Each sister = 2	1	1

Base number is the LCM of 3, 6 and 6 = 6.

2 full sisters: $6 \times 2/3 = 4$ portions. Each full sister gets 2 portions.

Uterine brother: $6 \times 1/6 = 1$ portion

Grandmother: $6 \times 1/6 = 1$ portion

Rule F: In a situation whereby the denominator of the shares are parallel, multiply them and the solution is the base number.

Example 11

Heirs	2 daughters	Wife	Full uncle's son
Shares	2/3	1/8	Residue
Base number	24		
Portions	Each daughter = 8	3	5

2 daughters: $24 \times 2/3 = 16$ portions. Each daughter receives 8 portions.

Wife: $24 \times 1/8 = 3$ portions

Full uncle's son: $24 - 16 - 3 = 5$ portions or $24 - (16 + 3) = 5$ portions

Example 12

Heirs	Wife	1 uterine brother; 1 uterine sister	1 consanguine brother; 3 consanguine sisters
Shares	1/4	1/3	Residue
Base number	12		
Portions	3	4	5

Wife: $12 \times 1/4 = 3$ portions

1 uterine brother and 1 uterine sister: $12 \times 1/3 = 4$ portions. Each is given 2 portions because two or more uterines share 1/3 of the estate equally irrespective of whether they are males or females.

1 consanguine brother and 3 consanguine sisters: $12 - (3 + 4) = 5$ portions. Consanguine brother gets 2 portions while each consanguine sister inherits 1 portion.

Exercise 1

The heirs of a deceased are two daughters, mother, father, brother and sister. How will the estate be allotted to them?

HIGHEST COMMON FACTOR (HCF)

Given any number, its factors are numbers which can divide it and the solution is a whole number. For example: What are the factors of 10? To answer this, 10 is divided by all numbers between 1 and 10.

$10 \div 1 = 10$	$10 \div 6 = 1.67$
$10 \div 2 = 5$	$10 \div 7 = 1.43$
$10 \div 3 = 3.33$	$10 \div 8 = 1.25$
$10 \div 4 = 2.5$	$10 \div 9 = 1.11$
$10 \div 5 = 2$	$10 \div 10 = 1$

Therefore, the factors of 10 = 1, 2, 5 and 10

Using this approach, the factors of 6 will be 1, 2, 3 and 6; because if 6 is divided by 4 and 5, the answers will not be whole numbers. That is to say the common factors of 10 and 6 are 1 and 2. And the Highest Common Factor (HCF) of 10 and 6 is 2. But the following should be noted:

- i) 1 is a factor of any number
- ii) All numbers are factors of themselves
- iii) The factor of a number CANNOT be greater than the number itself.

Another example. What is the HCF of 12 and 15?

Factors of 12 = 1, 2, 3, 4, 6 and 12

Factors of 15 = 1, 3, 5 and 15

Common factors of 12 and 15 = 1 and 3

HCF of 12 and 15 = 3

Prime Numbers

These are numbers whose factors are ONLY 1 and themselves. If they are divided by any other number, the answer will not be a whole number. An example is 11.

$11 \div 1 = 11$	$11 \div 5 = 2.2$	$11 \div 9 = 1.22$
$11 \div 2 = 5.5$	$11 \div 6 = 1.83$	$11 \div 10 = 1.1$
$11 \div 3 = 3.67$	$11 \div 7 = 1.57$	$11 \div 11 = 1$
$11 \div 4 = 2.75$	$11 \div 8 = 1.38$	

Since only 1 and 11 are the factors of 11, it is said to be a prime number. Others are 3, 5, 7, 13, 17, 19, 23, ...

Now, the HCF of two numbers one of which is a prime number is 1. For instance, what is the HCF of 5 and 6?

Factors of 5 = 1 and 5

Factors of 6 = 1, 2, 3 and 6

Common factor of 5 and 6 = 1

HCF of 5 and 6 = 1

The rule also applies if both numbers are prime numbers. Example, what is the HCF of 13 and 17?

Factors of 13 = 1 and 13

Factors of 17 = 1 and 17

Common factor of 13 and 17 = 1

HCF of 13 and 17 = 1

Observe that whenever the common factor of a set of numbers is 1, the HCF of the numbers is also 1. This is normal Mathematics. But the rules of Inheritance Arithmetic which I call “inherithmetic” sometimes violate well known Mathematical principles. The most important of these violations is that inherithmetic DOES NOT recognise 1 as a common factor. So, revisiting our earlier solutions,

Common factor of 10 and 6 = 2

Common factor of 12 and 15 = 3

Common factor of 5 and 6 = No common factor!

Common factor of 13 and 17 = No common factor!

In order to differentiate between common factor of Mathematics which incorporates 1 and the common factor of inherithmetic that does not recognise 1, the latter will be renamed “Common Divisor” and henceforth, that is what will be used. As the name implies, common divisor is a number OTHER THAN 1, that can divide the numbers under consideration and the answers will be whole numbers. In case there exist 2 or more common divisors, the “Highest Common Divisor (HCD)” is used.

Recall that two or more numbers are parallel when they are not the same and one is not a multiple of the other. Also, the LCM of parallel numbers is gotten by simply multiplying them. At this point, this method of finding the LCM of parallel numbers will be modified. The modification does not affect what has been discussed earlier. The new rule is: if two parallel numbers ‘A’ and ‘B’ HAVE A COMMON DIVISOR, their LCM is determined by DIVIDING ‘A’ with the common divisor, then use the solution to MULTIPLY ‘B’. Alternatively, divide ‘B’ by the common divisor and multiply the solution with ‘A’. Both approaches will give the same answer. But when the parallel numbers HAVE NO COMMON DIVISOR, the previous rule of multiplying them gives the LCM.

Question: What is the LCM of 3 and 7?

Common divisor of 3 and 7 = None

LCM of 3 and 7 = $3 \times 7 = 21$

Question: What is the LCM of 6 and 8?

Common divisor of 6 and 8 = 2

LCM of 6 and 8 = $6 \div 2 = 3 \times 8 = 24$ or $8 \div 2 = 4 \times 6 = 24$

Notice that if the previous rule were applied, the LCM should have been $6 \times 8 = 48$; which is not quite correct. Let’s prove it.

Multiples of 6 = 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, ...

Multiples of 8 = 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, ...

Common multiples of 6 and 8 = 24, 48, 72, 96, 120, ...

LCM of 6 and 8 = 24

Therefore, it can be established that not all parallel numbers are actually parallel. Some tend to “converge” at a point. This phenomenon is called *TAWAFUQ*, which I translate as Converge. In summary, the 4 relationships between numbers are:

- i) Same (*Tamathul*)
- ii) One being a multiple of the other (*Tadakhul*)
- iii) Parallel – neither (i) nor (ii) and have no common divisor (*Tabayin*)
- iv) Converge – neither (i) nor (ii) but have a common divisor (*Tawafuq*)

The reader is encouraged to take some time and arbitrarily write down any two numbers then consider the relationship between them. It MUST NECESSARILY be one of these four!

Rule G: When there is a common divisor between the denominators of the shares, divide one by the common divisor and multiply the solution with the other. The result is the base number.

Example 12

Heirs	Husband	Grandmother	Son
Shares	$\frac{1}{4}$	$\frac{1}{6}$	Residue
Base number	12		
Portions	3	2	7

Common divisor of 4 and 6 = 2

LCM of 4 and 6 = $4 \div 2 = 2 \times 6 = 12$ or $6 \div 2 = 3 \times 4 = 12$

Husband: $12 \times \frac{1}{4} = 3$ portions

Grandmother: $12 \times \frac{1}{6} = 2$ portions

Son: $12 - 3 - 2 = 7$ portions or $12 - (3 + 2) = 7$ portions

INCREMENT OF BASE NUMBER ('AWL)

Earlier, we made mention of a father who gave his three children, ‘A’, ‘B’ and ‘C’ £120 to share in proportions of $1/3$, $1/6$ and $1/2$ respectively. Of course the LCM of 3, 6 and 2 is 6 which is also the base number; so £120 is divided into 6 portions.

‘A’: $6 \times 1/3 = 2$ portions

‘B’: $6 \times 1/6 = 1$ portion

‘C’: $6 \times 1/2 = 3$ portions

Sum of the portions = $2 + 1 + 3 = 6$ portions; equivalent to the base number. This is an example of a perfect distribution of an estate. However, supposing the share of ‘C’ was $2/3$, what happens? Their shares will then be $1/3$, $1/6$

and 2/3. The base number is still 6. But 'C' shall be entitled to 4 portions! How?

'C': $6 \times 2/3 = 4$ portions

New sum of portions = $2 + 1 + 4 = 7$ portions; which is greater than the base number. What is the implication of this? Let's examine it critically.

1 portion of £120 = $\text{£}120 \div 6 = \text{£}20$

'A' has 2 portions = $\text{£}20 \times 2 = \text{£}40$

'B' has 1 portion = $\text{£}20 \times 1 = \text{£}20$

'C' has 4 portions = $\text{£}20 \times 4 = \text{£}80$

Summation = $\text{£}40 + \text{£}20 + \text{£}80 = \text{£}140$

Something must be wrong somewhere. The possibilities are:

- i) The share of at least one of the children (i.e. 1/3, 1/6 or 2/3) is wrong.
- ii) The father erroneously gave them £120 instead of £140.

But in inheritance, none of these assumptions hold water. That is to say, the shares of the children which denote the shares of heirs are correct. Also, the amount the father gave; a figurative expression meaning the total asset of a deceased is equally correct. Actually, this is a practical example whereby a deceased leaves behind 2 uterine brothers, mother and 2 full sisters with a total estate worth £120. To solve this problem, the base number is increased from 6 to 7. This procedure is called Increment of Base Number. Therefore,

1 portion of £120 = $\text{£}120 \div 7 = \text{£}17.14$

'A' (2 Uterine brothers): $\text{£}17.14 \times 2$ portions = £34.28

'B' (Mother): $\text{£}17.14 \times 1$ portion = £17.14

'C' (2 Full sisters): $\text{£}17.14 \times 4$ portions = £68.56

Summation = $\text{£}34.28 + \text{£}17.14 + \text{£}68.56 = \text{£}119.98$; approximately £120

Note that the amount each category of heir finally gets reduces in proportion to its share. For instance, full sisters with the largest share have the highest reduction. Thus,

Heirs	Original value of portion	New value of portion	Reduction
Uterine brothers	£40	£34.28	£5.72
Mother	£20	£17.14	£2.86
Full sisters	£80	£68.56	£11.44

Rule H: If the result of summation of portions is greater than the base number, such result becomes the base number. Yet, each heir retains his/her number of portions originally allotted to him/her. Though, their shares will reduce proportionately.

Example 13

Heirs	Mother	Husband	Full sister
Shares	1/3	1/2	1/2
Base number		6	
Portions	2	3	3
Increased base number		8	

Mother: $6 \times 1/3 = 2$ portions

Husband: $6 \times 1/2 = 3$ portions

Full sister: $6 \times 1/2 = 3$ portions

Summation = $2 + 3 + 3 = 8$ portions; which is greater than the base number.

Hence, the base number is increased to 8.

Example 14

Heirs	Wife	2 consanguine sisters	2 uterine sisters
Shares	1/4	2/3	1/3
Base number		12	
Portions	3	4 apiece	2 apiece
Increased base number		15	

Wife: $12 \times 1/4 = 3$ portions

2 consanguine sisters: $12 \times 2/3 = 8$ portions; each one gets 4 portions

2 uterine sisters: $12 \times 1/3 = 4$ portions; each one gets 2 portions

Total = $3 + 8 + 4 = 15$ portions; which is greater than the base number.

Accordingly, the base number is increased to 15.

Example 15

Heirs	Wife	Father	Mother	2 daughters
Shares	1/8	1/6	1/6	2/3
Base number		24		
Portions	3	4	4	16
Increased base number		27		

Observe that the father's share suppose to be "1/6 + residue," but the base number, 24, is not even enough to share among the heirs, so there will be no question of any residue.

This is a celebrated case of inheritance called *MIMBARIYYA* for the reason that Caliph 'Ali solved it while delivering a sermon on the *mimbar* (i.e. pulpit) in a Mosque at Kufa, in present day Iraq. He was asked what a wife's share will be if the surviving heirs of a deceased are wife, both parents and 2 daughters. There and then, he answered, "The wife's 1/8 becomes 1/9." Let's examine this.

Using the original base number, wife has $24 \times 1/8 = 3$ portions

With increment of base number and considering 'Ali's response, wife gets $27 \times 1/9 = 3$ portions

This further buttresses the point that whenever the base number is increased, an heir's share reduces (in this case from $1/8$ to $1/9$) but his/her number of portions remains intact.

IMPORTANT: Increment of base number only applies when ALL categories of heirs have fixed shares. If residuaries are present, increment will not be necessary because they are given whatever remains. Residuaries cannot force those with fixed heirs to reduce their shares to enable them have something. However, in exceptional cases whereby increment has to be done and a residuary is among the heirs, he/she most likely receives nothing. For example,

Heirs	Husband	Mother	2 daughters	Full uncle
Shares	$\frac{1}{4}$	$\frac{1}{6}$	$\frac{2}{3}$	Residue
Base number	12			
Portions	3	2	8	0
New base number	13			

Notice that even though full uncle is an heir, despite the increment, he still gets nothing.

LEVEL 2

Level 2(a): One category of heirs cannot share its portion of the estate

Rule I: Let the number of heads of the category of heirs that cannot share its portion be 'X', and the number of portions allotted to the category be 'Y'. If 'X' and 'Y' are parallel, multiply the number of heads of the heirs by the base number to generate a new base number.

Example 16

Heirs	Mother	2 Sons; 2 Daughters
Shares	$\frac{1}{6}$	Residue
Base number	6	
Portions	1	5

Rule C was used to arrive at 6, the base number. Henceforth, this will not be stated. It is assumed that the reader is conversant with all the rules of Level 1. Levels 2 and 3 are advanced stages of Level 1. So, given any inheritance problem, one has to use the appropriate Level 1 rule to get the base number and the number of portions each category of heir is entitled to. If ALL categories are able to share their portions of the estate, that is a Level 1 problem and the task is completed. However, when 1 or 2 categories of heirs are NOT able to share their portions of the estate, we have a Level 2 problem at hand. A new base number is generated using the suitable Level 2 rule. Finally, new portions are calculated for each category of heir. Thus,
Mother: $6 \times \frac{1}{6} = 1$ portion

2 sons and 2 daughters: Residue i.e. $6 - 1 = 5$ portions

Number of heads of 2 sons and 2 daughters = 6

This problem has two categories of heirs: mother on one hand and 2 sons and 2 daughters on the other. Mother inherits 1 portion of the estate. She has no problem. But 2 sons and 2 daughters cannot share 5 portions because their number of heads is 6 (2 sons = 4 heads; 2 daughters = 2 heads). So, they require 6 portions, NOT 5 portions as allocated to them. For this reason, we conclude that they CANNOT SHARE THEIR PORTION of the estate. Note that 'awl' (increment of base number) is not applicable here because residuaries are present and they are entitled to some portion of the estate. To solve this, consider the number of heads of the category that cannot share its portion (i.e. 6) and its number of portions (i.e. 5). 6 and 5 are parallel since they have no common divisor. In other words, no existing number can divide 6 and equally divide 5 without a remainder. At this point it will be nice to show WHY one (1) is not regarded as a common divisor, given that it is the only number that can divide 6 and 5 without remainder.

$$6 \div 1 = 6 \quad 5 \div 1 = 5$$

The results of both divisions are the same as the original problem. What have we done? Nothing. Any progress made towards solving our problem? No. So, it's evident that inherithmetic was right not to consider 1 as a common divisor. Now, applying the rule,

'X' = Number of heads = 6

'Y' = Base number = 6

'X' multiplied by 'Y' gives the new base number. Accordingly,

New base number = $6 \times 6 = 36$

Step 4 will then be repeated (using the new base number)

Mother: $36 \times 1/6 = 6$ portions

2 sons and 2 daughters: Residue i.e. $36 - 6 = 30$ portions

This is shared among the children such that sons get twice the share of daughters. The easiest way to do this is to divide the 30 portions by their number of heads. Therefore,

$30 \text{ portions} \div 6 \text{ heads} = 5 \text{ portions/head}$

Each son is given $5 \text{ portions/head} \times 2 \text{ heads} = 10$ portions

Each daughter inherits $5 \text{ portions/head} \times 1 \text{ head} = 5$ portions

The table now becomes

Heirs	Mother	2 Sons; 2 Daughters
Shares	$1/6$	Residue
Base number		6
Portions	1	5
Number of heads	1	6

New base number	36		
New portions	6	Each son = 10 Each daughter = 5	

Example 17

Heirs	5 daughters	Mother	Full sister
Shares	2/3	1/6	Residue
Base number	6		
Portions	4	1	1
Number of heads	5	1	1
New base number	30		
New portions	4 apiece	5	5

Full sister is acting as a residuary with another. She is given 1 portion. Likewise, mother receives 1 portion. But 5 daughters cannot share 4 portions. So,

Number of heads of 5 daughters = 5

Base number = 6

New base number = $5 \times 6 = 30$

New portion of 5 daughters: $30 \times 2/3 = 20$; which is shared among them equally. Each daughter gets $20 \text{ portions} \div 5 = 4$ portions

New portion of Mother: $30 \times 1/6 = 5$

New portion of full sister: Residue i.e. $30 - (20 + 5) = 5$

Rule J: Given a category of heirs that cannot share its portion of the estate, if the number of heads of heirs in the category and their number of portions have a common divisor, divide the NUMBER OF HEADS by the common divisor, then use the answer to multiply the base number. The result is the new base number.

Example 18

Heirs	Father	Mother	6 daughters
Shares	1/6 + residue	1/6	2/3
Base number	6		
Portions	1	1	4

Father's share is "1/6 + residue" but there is no residue, as a result, he gets 1/6 only.

6 daughters cannot share 4 portions

Number of heads of daughters = 6

Number of portions of daughters = 4

What is the relationship between 6 and 4? They converge because THEY HAVE a common divisor, 2. Therefore, DIVIDE the number of heads by the common divisor and MULTIPLY the answer with the base number. The result is the new base number. Thus,

New base number = $6 \div 2 = 3 \times 6 = 18$

New portion of Father: $18 \times 1/6 = 3$

New portion of Mother: $18 \times 1/6 = 3$

New portion of 6 daughters: $18 \times 2/3 = 12$

Each daughter inherits 12 portions $\div 6 = 2$ portions

The complete table then is,

Heirs	Father	Mother	6 daughters
Shares	1/6	1/6	2/3
Base number			6
Portions	1	1	4
Number of heads	1	1	6
New base number			18
New portions	3	3	Each daughter = 2

Example 19

Heirs	Husband	Mother	Father	5 Sons; 5 Daughters
Shares	1/4	1/6	1/6	Residue
Base number				12
Portions	3	2	2	5
Number of heads	1	1	1	15
New base number				36
New portions	9	6	6	Each son = 2 Each daughter = 1

5 sons and 5 daughters cannot share 5 portions

Number of heads of 5 sons and 5 daughters = 15

Common divisor of 15 and 5 = 5

New base number = $15 \div 5 = 3 \times 12 = 36$

New portion of Husband: $36 \times 1/4 = 9$

New portion of Mother: $36 \times 1/6 = 6$

New portion of Father: $36 \times 1/6 = 6$

New portion of 5 sons and 5 daughters: $36 - (9 + 6 + 6) = 15$

Each son gets 2 portions while each daughter receives 1.

Level 2(b): Two categories of heirs cannot share their portions of the estate AND there is no common divisor between the number of heads and the corresponding number of portions of BOTH categories i.e. they are parallel

Rule K: If the number of heads in both categories are the same, pick one and multiply it by the base number to get a new base number

Example 20

Heirs	2 Wives	2 Full sisters	2 Consanguine brothers
Shares	$\frac{1}{4}$	$\frac{2}{3}$	Residue
Base number	12		
Portions	3	8	1
Number of heads	2	2	2
New base number	24		
New portions	Each = 3	Each = 8	Each = 1

The two full sisters can share the 8 portions allotted to them such that each gets 4 portions. But 2 wives cannot share 3 portions of the estate. Likewise, 2 consanguine brothers cannot share 1 portion. Meaning that, we have 2 categories of heirs that cannot share their portions. That is the first criteria of applying the rules of Level 2(b). The second is that the number of heads and the corresponding number of portions of BOTH categories MUST be parallel. The example above also fulfils the second criteria in that the category “wives” has 2 heads and 3 portions. 2 and 3 are parallel since they have no common divisor. Similarly, 2 and 1, the number of heads and number of portions of category “consanguine brothers” respectively are parallel! But WHY is the number of heads of consanguine brothers said to be 2? If every male has “2 heads,” then the total number of heads of 2 consanguine brothers should be 4! Yes, very true. But recall the point noted in Example 2; that if all heirs are male, each should be considered as having “1 head” so as to reduce the base number. The principle also applies when ALL heirs in a category are male. Thus, the number of heads of 2 consanguine brothers HERE is 2 since only the two of them make a category. There is no female among them.

Now, applying Rule K, the number of heads of both categories that cannot share their portions are the same. So,

$$\text{New base number} = 2 \times 12 = 24$$

$$\text{New portion of wives: } 24 \times \frac{1}{4} = 6$$

$$\text{New portion of 2 full sisters: } 24 \times \frac{2}{3} = 16$$

$$\text{New portion of 2 consanguine brothers: } 24 - (6 + 16) = 2$$

Each wife, full sister and consanguine brother inherits 3, 8 and 1 portions respectively.

Rule L: If the number of heads in one category is a multiple of the number of heads in the other category, use the higher number to multiply the base number so as to generate a new base number

Example 21

Heirs	2 Wives	Daughter	4 Half uncles
Shares	1/8	½	Residue
Base number	8		
Portions	1	4	3
Number of heads	2	1	4
New base number	32		
New portions	Each wife = 2	16	Each uncle = 3

The categories that cannot share their portions are “wives” and “half uncles” because in the former, 2 wives cannot share 1 portion, while in the latter, 4 half uncles cannot share 3 portions. Also, 2 and 1 are parallel, just as 4 and 3 are parallel. Now, looking at the number of heads in both categories, 4 is a multiple of 2, so we pick the higher one, 4. Therefore,

$$\text{New base number} = 4 \times 8 = 32$$

$$\text{New portion of 2 wives: } 32 \times 1/8 = 4$$

$$\text{New portion of daughter: } 32 \times ½ = 16$$

$$\text{New portion of 4 half uncles: } 32 - (4 + 16) = 12$$

Note that the number of heads of 4 half uncles suppose to be 8, but given that there is no female among them, each one is considered as having “1 head.” Assuming 8 was used instead of 4; the problem should have been solved like this.

Heirs	2 Wives	Daughter	4 Half uncles
Shares	1/8	½	Residue
Base number	8		
Portions	1	4	3
Number of heads	2	1	8
New base number	64		
New portions	Each wife = 4	32	Each uncle = 6

Number of heads of “half uncles” category, 8, is a multiple of 2, the number of heads of “wives” category. As a result, 8 is chosen. Thus,

$$\text{New base number} = 8 \times 8 = 64; \text{ which is more than the 32 earlier gotten.}$$

In line with this, let's revisit Example 20 and use 4 as the number of heads of the 2 consanguine brothers instead of 2. By doing that, Rule L will be applied rather than Rule K. So,

Heirs	2 wives	2 full sisters	2 consanguine brothers
Shares	¼	2/3	Residue
Base number	12		
Portions	3	8	1
Number of heads	2	2	4
New base number	48		
New portions	Each = 6	Each = 16	Each = 2

As in Example 21, the number of heads of “consanguine brothers” category, 4, is a multiple of 2, the number of heads of “wives” category, hence 4 is picked, being the higher number.

New base number = $4 \times 12 = 48$; which is also more than the 24 earlier gotten.

Therefore, it is evident that in both cases, the new base number is doubled when each male in an exclusive male category is considered to have “2 heads.” And as the principle of base number is that the MINIMUM is always chosen, the previous solutions are hereby retained. This further buttresses the fact that males are believed to have “1 head” when they are the only heirs OR when they are the only ones in a category!

Rule M: When the number of heads in both categories is parallel, multiply them; then multiply the answer by the base number. The result obtained is the new base number

Example 22

Heirs	2 Wives	3 Uterine sisters	Full brother's son
Shares	$\frac{1}{4}$	$\frac{1}{3}$	Residue
Base number	12		
Portions	3	4	5
New base number	72		
New portions	Each = 9	Each = 8	30

2 wives cannot share 3 portions and 3 uterine sisters cannot share 4 portions of the estate. In both categories, number of heads and number of portions are parallel. That is, 2 and 3 for wives and 3 and 4 for uterine sisters respectively. Also, the number of heads in both categories, 2 (wives) and 3 (uterine sisters) are equally parallel. Hence,

$$\text{New base number} = 2 \times 3 = 6 \times 12 = 72$$

$$\text{New portion of 2 Wives: } 72 \times \frac{1}{4} = 18$$

$$\text{New portion of 3 uterine sisters: } 72 \times \frac{1}{3} = 24$$

$$\text{New portion of Full brother's son: } 72 - (18 + 24) = 30$$

Each wife and uterine sister is given 9 and 8 portions respectively, while full brother's son receives 30 portions.

Rule N: If the numbers of heads of the two categories that cannot share their portions have a common divisor, divide ANY of them by the common divisor, then multiply the result by the OTHER. Finally, multiply the solution obtained by the base number. The end result gives the new base number

Example 23

Heirs	9 Daughters	6 Uterine brothers
Shares	2/3	1/3
Base number		3
Portions	2	1
New base number		54
New portions	4 apiece	3 apiece

Both categories cannot share their portions. In addition, the number of heads and number of portions for both categories (i.e. 9 and 2; 6 and 1) are parallel. But considering the number of heads 9 and 6, they have a common divisor, 3. Consequently,

New base number = $9 \div 3 = 3 \times 6 = 18 \times 3 = 54$; alternatively,

New base number = $6 \div 3 = 2 \times 9 = 18 \times 3 = 54$

New portion of 9 daughters: $54 \times 2/3 = 36$

New portion of 6 uterine brothers: $54 - 36 = 18$

Each daughter and uterine brother gets 4 and 3 portions respectively.

Level 2(c): Two categories of heirs cannot share their portions of the estate. However, the number of heads and number of portions of one category HAVE a common divisor, while the number of heads and the number of portions of the other category ARE PARALLEL.

Recall that whenever two or more numbers converge, it means that they have a common divisor. Now, if any one of the numbers is divided by the common divisor, the result is called *WAFQ* of that number which I translate as ADJUST. For instance, 6, 15 and 21 converge because their common divisor is 3.

$$6 \div 3 = 2 \quad 15 \div 3 = 5 \quad 21 \div 3 = 7$$

Thus, the *wafq* or adjust of 6 is 2, adjust of 15 is 5 and adjust of 21 is 7. Notice that it is the technical name used to identify the result of the division that is being introduced here; otherwise nothing is new.

Rule O: If the ADJUST of the category that has a common divisor is the same with the NUMBER OF HEADS of the category that has no common divisor, select any of them and multiply by the base number. The result is the new base number.

Example 24

Heirs	Mother	6 Daughters	3 Grandsons
Shares	1/6	2/3	Residue
Base number		6	
Portions	1	4	1
Number of heads	1	6	3

New base number	18		
New portions	3	Each = 2	Each = 1

Mother gets her 1 portion. She has no problem. 6 daughters cannot share 4 portions. Likewise, 3 grandsons cannot share 1 portion. But in the “daughters” category, the number of heads, 6, and the number of portions, 4, have a common divisor, 2. Consequently,

$$6 \div 2 = 3 \quad 4 \div 2 = 2$$

So, adjust of the “daughters” category are 3 and 2. But a general rule is that **only the adjust resulting from division of number of heads is considered.** Therefore, 3 will be used in this case.

As for the “grandson” category, the number of heads, 3, and the number of portions, 1, have no common divisor. Applying the rule, the adjust of the “daughters” category which has a common divisor, 3, is the same with the number of heads of the “grandson” category that has no common divisor. So, one of them is selected. Thus,

$$\text{New base number} = 3 \times 6 = 18$$

$$\text{New portion of Mother: } 18 \times 1/6 = 3$$

$$\text{New portion of 6 Daughters: } 18 \times 2/3 = 12$$

$$\text{New portion of 3 Grandsons: } 18 - (3 + 12) = 3$$

Each daughter and grandson inherits 2 and 1 portions respectively.

Rule P: Examine the ADJUST of the category whose number of heads and number of portions have a common divisor along with the NUMBER OF HEADS of the category with no common divisor. If one is a multiple of the other, multiply the higher one with the base number to arrive at the new base number

Example 25

Heirs	4 Wives	2 Full brothers; 2 Full sisters
Share	$\frac{1}{4}$	Residue
Base number	4	
Portions	1	3
Number of heads	4	6
New base number	16	
New portions	Each wife = 1	Each brother = 4; each sister = 2

“Wives” category: 4 wives cannot share 1 portion; and there is no common divisor between 4 (number of heads) and 1 (number of portions).

“Full brothers and sisters” category: 2 full brothers and 2 full sisters cannot share 3 portions; but there is a common divisor between 6 (number of heads) and 3 (number of portions). It’s 3. Note that since the category has both male and female heirs, each male is taken to have “2 heads.” Therefore,

$$\text{Adjust} = 6 \div 3 = 2$$

But the number of heads of “wives” category, 4, is a multiple of 2, the adjust of the “full brothers and full sisters” category. So,

$$\text{New base number} = 4 \times 4 = 16$$

$$\text{New portion of 4 Wives: } 16 \div \frac{1}{4} = 4$$

$$\text{New portion of 2 Full brothers and 2 full sisters: } 16 - 4 = 12$$

Each wife, full brother and full sister is given 1, 4 and 2 portions respectively.

Rule Q: In a situation whereby there is a parallel relationship between the ADJUST of the category whose number of heads and number of portions have a common divisor and the NUMBER OF HEADS of the category that has no common divisor, multiply the adjust with the number of heads, then further multiply the answer with the base number to get the new base number.

Example 26

Heirs	4 Daughters	Grandson; granddaughter
Shares	2/3	Residue
Base number		3
Portions	2	1
Number of heads	4	3
New base number		18
New portions	Each daughter = 3	Grandson = 4; granddaughter = 2

“Daughters” category: 4 daughters cannot share 2 portions; but their number of heads, 4, and number of portions, 2, have a common divisor, 2. Thus,

$$\text{Adjust} = 4 \div 2 = 2$$

“Grandchildren” category: 1 grandson and 1 granddaughter cannot share 1 portion; and there is no common divisor of 3 (number of heads) and 1 (number of portions).

But, the adjust and number of heads, 2 and 3 respectively are parallel.

$$\text{New base number} = 2 \times 3 = 6 \times 3 = 18$$

$$\text{New portion of 4 daughters: } 18 \times 2/3 = 12$$

$$\text{New portion of grandson and granddaughter: } 18 - 12 = 6$$

Each daughter is given 3 portions. Grandson and granddaughter each receive 4 and 2 portions respectively.

Rule R: Whenever the ADJUST of the category whose number of heads and number of portions have a common divisor and the NUMBER OF HEADS of the category that has no common divisor converge, divide any of them by the common divisor and multiply by the other. Again, multiply the answer by the base number to generate a new base number

Example 27

Heirs	8 Daughters	6 consanguine brothers
Shares	2/3	Residue
Base number		3
Portions	2	1
Number of heads	8	6
New base number		36
New portions	Each daughter = 3	Each brother = 2

“Daughters” category: 8 daughters cannot share 2 portions; but there is a common divisor of 8 (number of heads) and 2 (number of portions). It’s 2. Thus,

$$\text{Adjust} = 8 \div 2 = 4$$

“Consanguine brothers” category: 6 brothers cannot share 1 portion; and there is no common divisor of 6 (number of heads) and 1 (number of portions).

Now, the adjust and the number of heads of brothers, 4 and 6 respectively incidentally converge. Therefore, what is the common divisor of 4 and 6? 2.

$$\text{New base number} = 4 \div 2 = 2 \times 6 = 12 \times 3 = 36$$

$$\text{Alternatively, } 6 \div 2 = 3 \times 4 = 12 \times 3 = 36$$

$$\text{New portion of 8 daughters: } 36 \times 2/3 = 24$$

$$\text{New portion of 6 consanguine brothers: } 36 - 24 = 12$$

Each daughter and brother receives 3 and 2 portions respectively.

Level 2(d): Two categories of heirs cannot share their portions of the estate but the number of heads and corresponding number of portions of BOTH categories CONVERGE i.e. have a common divisor

Rule S: Consider the ADJUSTS of both categories. If they are the same, choose one and multiply it by the base number to obtain the new base number

Example 28

Heirs	Mother	4 uterine brothers	6 consanguine brothers
Shares	1/6	1/3	Residue
Base number		6	
Portions	1	2	3
Number of heads	1	4	6
New base number		12	
New portions	2	Each brother = 1	Each brother = 1

4 uterine brothers cannot share 2 portions; but 4 (number of heads) and 2 (number of portions) converge. Their common divisor is 2.

6 consanguine brothers cannot share 3 portions; also their number of heads, 6, and number of portions, 3, converge. Common divisor of 6 and 3 is 3.

Adjust of uterine brothers = $4 \div 2 = 2$

Adjust of consanguine brothers = $6 \div 3 = 2$

The two adjusts are the same. The rule says, select any and multiply by the base number, so

New base number = $2 \times 6 = 12$

New portion of mother: $12 \times 1/6 = 2$

New portion of 4 uterine brothers: $12 \times 1/3 = 4$

New portion of 6 consanguine brothers: $12 - (2 + 4) = 6$

Rule T: If one ADJUST is a multiple of the other, multiply the higher one by the base number. The result is the new base number

Example 29

Heirs	Grandmother	4 uterine brothers; 4 uterine sisters	6 full brothers
Shares	$1/6$	$1/3$	Residue
Base number		6	
Portions	1	2	3
Number of heads	1	8	6
New base number		24	
New portions	4	Each sibling = 1	Each brother = 2

Grandmother is given her 1 portion. She has no problem.

4 uterine brothers and 4 uterine sisters cannot share 2 portions. However, 8 (their number of heads) and 2 (their number of portions) converge. The common divisor of 8 and 2 is 2.

But wait a minute, the category “uterine brothers and uterine sisters” is made up of males and females. And as stated earlier, in this circumstance, males have “2 heads,” therefore, number of heads of 4 uterine brothers and 4 uterine sisters should be 12 not 8! Yes, that’s true. We forgot to mention that that principle applies only when the males in the category will receive twice the portion of the females. Recall Example 26 above. The category “grandson and granddaughter” is said to have 3 heads. Why? Because grandson is entitled to two times the number of portions of granddaughter. Thus, he has “2 heads” while granddaughter has “1 head” making 3 heads. That is why their new portions were 4 and 2 respectively. As for uterine siblings, they share their portion of the estate in equal proportions irrespective of gender, so all of them are regarded as having “1 head.” Consequently, number of heads of 4 uterine brothers and 4 uterine sisters is 8.

Adjust of 4 uterine brothers and 4 uterine sisters = $8 \div 2 = 4$

Similarly, 6 full brothers cannot share 3 portions; nevertheless 6 and 3 converge. Common divisor of 6 and 3 is 3.

Adjust of 6 full brothers = $6 \div 3 = 2$

Now, the two adjusts, 4 and 2, one is a multiple of the other. Applying the rule,

New base number = $4 \times 6 = 24$

New portion of grandmother: $24 \times 1/6 = 4$

New portion of 4 uterine brothers and 4 uterine sisters: $24 \times 1/3 = 8$

New portion of 6 full brothers: $24 - (4 + 8) = 12$

Each uterine sibling gets 1 portion of the estate while each full brother inherits 2 portions.

Rule U: If the ADJUSTS of the two categories that cannot share their portions are PARALLEL, i.e. have no common divisor, multiply both adjusts, then multiply the answer by the base number. This gives the new base number

Example 30

Heirs	6 Full sisters	4 uterine brothers	Mother
Shares	2/3	1/3	1/6
Base number	6		
Portions	4	2	1

Is there anything intriguing in this example? Probably not obvious. OK, take some time to add up the number of portions. $4 + 2 + 1 = 7$. This is greater than the base number. So, what comes to mind? ‘Awl’ (increment of base number)! But as stated earlier, even if base number is increased, the number of portions of each category of heir is not affected. Hence, 6 full sisters cannot share 4 portions; similarly, 4 uterine brothers cannot share 2 portions. Mother has no problem.

Adjust of full sisters = $6 \div 2 = 3$ (Common divisor of 6 and 4 is 2).

Adjust of uterine brothers = $4 \div 2 = 2$ (Common divisor of 4 and 2 is 2).

The adjusts, 3 and 2 are parallel.

New base number = $3 \times 2 = 6 \times 7 = 42$ (Observe that the base number was increased from 6 to 7).

IMPORTANT: Whenever the base number is increased, original shares are not used to determine new portions. New shares are “created” for each category such that the NUMBER OF PORTIONS serves as the numerator while the denominator is the INCREASED BASE NUMBER. Therefore,

New share of 6 full sisters = $4/7$

New share of 4 uterine brothers = $2/7$

New share of mother = $1/7$. Consequently,

New portion of 6 full sisters: $42 \times 4/7 = 24$

New portion of 4 uterine brothers: $42 \times 2/7 = 12$

New portion of mother: $42 \times 1/7 = 6$

Total number of portions: $24 + 12 + 6 = 42!$

If the original shares ($2/3$, $1/3$ and $1/6$) were used, the total number of portions would have been 49. Confirm that please. As a result, the final table should look like this.

Heirs	6 Full sisters	4 Uterine brothers	Mother
Original shares	$2/3$	$1/3$	$1/6$
Base number		6	
Portions	4	2	1
Increased base number		7	
New shares	$4/7$	$2/7$	$1/7$
New base number		42	
New portions	Each sister = 4	Each brother = 3	6

Rule V: When the ADJUSTS of both categories of heirs that cannot share their portions of the estate in turn CONVERGE, i.e. have a common divisor, divide any of the adjusts by their common divisor, multiply the solution by the other adjust. Finally multiply the answer by the by the base number. The result is the new base number

Example 31

Heirs	18 uncles' sons	Mother	2 uterine brothers; 6 uterine sisters
Shares	Residue	$1/6$	$1/3$
Base number		6	
Portions	3	1	2
Number of heads	18	1	8
New base number		72	
New portions	Each son = 2	12	Each uterine = 3

Adjust of 18 full uncles' sons = $18 \div 3 = 6$

Adjust of 2 uterine brothers and 6 uterine sisters = $8 \div 2 = 4$

(The background explanations have been skipped. It is assumed that by now, the reader is conversant with the procedure).

But the adjusts, 6 and 4 converge. Their common divisor is 2. Accordingly,

New base number = $6 \div 2 = 3 \times 4 = 12 \times 6 = 72$

Alternatively, $4 \div 2 = 2 \times 6 = 12 \times 6 = 72$

New portion of Mother: $72 \times 1/6 = 12$

New portion of 2 uterine brothers and 6 uterine sisters: $72 \times 1/3 = 24$

New portion of 18 uncles' sons: $72 - (12 + 24) = 36$

Note that the portions of mother and the uterines have to be determined first before knowing what the residue will be.

LEVEL 3

Three or more categories of heirs cannot share their portions of the estate.

Generally, the maximum number of categories that cannot share their portions is three. But we have decided to say “three or more” because the rule of solving for three categories is applicable to four, five and so on (if such higher order problems exist). Remember how to determine the LCM of 3 or more numbers? Select any two, find their LCM. Call it ‘X’. Then find the LCM of ‘X’ and the third number. Name this ‘Y’, and proceed like that until all the numbers are exhausted. That is how to solve Level 3 problems. There is no clear-cut rule on which categories to start with. One has the liberty to select any two. But for simplification, the following may be very handy.

Rule W: Examine the categories that cannot share their portions. Select any two that are SIMILAR and resolve them using the appropriate rule. Let the solution be ‘X’. Next, consider ‘X’ along with the next category; resolve them using the appropriate rule. Continue like that until all the categories have been resolved. Thereafter, multiply the end result by the base number to obtain the new base number.

From the above, it will be deduced that Level 3 has no any new rule. Depending on the problem at hand, the appropriate rules from (K) to (V) are applied.

Example 32

Heirs	10 Daughters	2 Wives	Mother	6 Full sisters
Shares	2/3	1/8	1/6	Residue
Base number		24		
Portions	16	3	4	1

Question 1: What categories are not able to share their portions?

Answer: “Daughters,” “wives” and “full sisters” categories.

Question 2: What is the relationship between the number of heads and number of portions of these categories?

Answer: “Daughters” category: 10 and 16 converge.

“Wives” category: 2 and 3 are parallel.

“Full sisters” category: 6 and 1 are parallel.

Question 3: Since two categories are parallel, consider them first. What is the relationship between their numbers of heads?

Answer: 2 (number of heads of wives) and 6 (number of heads of full sisters); one is a multiple of the other.

Question 4: What do we do?

Answer: Select the higher one.

Question 5: Which is...

Answer: 6

Question 6: What rule is that?

Answer: Rule L, “If the number of heads in one category is a multiple of the number of heads in the other category, use the higher number to multiply the base number.” But we do NOT multiply by the base number, until all the categories have been resolved.

Question 7: What is the adjust of “daughters” category that converges?

Answer: Common divisor of 10 and 16 is 2. Therefore, adjust of “daughters” category is $10 \div 2 = 5$.

Question 8: What is the relationship between 6 and 5; solutions of questions 5 and 7 respectively?

Answer: They are parallel.

Question 9: What do we do?

Answer: Apply Rule P, “In a situation whereby there is a parallel relationship between the ADJUST of the category whose number of heads and number of portions have a common divisor and the NUMBER OF HEADS of the category that has no common divisor, multiply the adjust with the number of head.” That is $5 \times 6 = 30$.

Question 10: Anymore category to resolve?

Answer: No.

Question 11: What next?

Answer: Apply Rule W, “...Thereafter, multiply the end result by the base number to obtain the new base number.”

Question 12: So, what is the new base number?

Answer: $5 \times 6 = 30 \times 24 = 720$

Question 13: Determine the new portion of each category of heir.

Answer: 10 daughters: $720 \times 2/3 = 480$ portions

2 wives: $720 \times 1/8 = 90$ portions

Mother: $720 \times 1/6 = 120$ portions

6 full sisters: $720 - (480 + 90 + 120) = 30$ portions

The complete table is

Heirs	10 Daughters	2 Wives	Mother	6 Full sisters
Shares	2/3	1/8	1/6	Residue
Base number	24			
Portions	16	3	4	1
New base number	720			
New portions	Each = 48	Each = 45	120	Each = 5

Example 33

Heirs	2 Wives	Mother	6 uterine sisters	2 consanguine brothers
Shares	$\frac{1}{4}$	$\frac{1}{6}$	$\frac{1}{3}$	Residue
Base number	12			
Portions	3	2	4	3

Using the procedure above but with less explanation and incorporating the original technical Arabic terms (for familiarisation), this problem can be solved as follows:

“Wives” category: Number of heads, 2, and number of portions, 3, are *tabayin* (parallel).

Mother has no problem. Note that if a category consists of only ONE heir, he/she simply takes whatever is allocated to the category even if it's 1 portion. That is why all along, mother do not use to have problem for the fact that one cannot have two mothers!

“Uterine sisters” category: Number of heads, 6, and number of portions, 4, are *tawafuq* (converge).

“Consanguine brothers” category: Number of heads, 2, and number of portions, 3, are *tabayin* (parallel).

Considering the two that are *tabayin*, number of heads of wives, 2 and the number of heads of consanguine brothers, 2 are *tamathul* (same). So, one is chosen (Rule K).

As for the “uterine sisters” category, the *wafq* (adjust) is 3. Now, 2 (selected number of heads) and 3 (*wafq*) are *tabayin*, so we multiply them (Rule Q). This gives $2 \times 3 = 6$. Finally,

New base number = $2 \times 3 = 6 \times 12 = 72$.

New portion of 2 wives: $72 \times \frac{1}{4} = 18$

New portion of mother: $72 \times \frac{1}{6} = 12$

New portion of 6 uterine sisters: $72 \times \frac{1}{3} = 24$

New portion of 2 consanguine brothers: $72 - (18 + 12 + 24) = 18$

The table will now look like this.

Heirs	2 Wives	Mother	6 uterine sisters	2 consanguine brothers
Shares	$\frac{1}{4}$	$\frac{1}{6}$	$\frac{1}{3}$	Residue
Base number	12			
Portions	3	2	4	3
New base number	72			
New portions	Each = 9	12	Each = 4	Each = 9

Example 34

Heirs	2 Granddaughters; 4 grandsons	2 Grandmothers	12 Daughters	4 Wives
Shares	Residue	1/6	2/3	1/8
Base number	24			
Portions	1	4	16	3
New base number	1440			
New portions	Each granddaughter = 6; each grandson = 12	Each = 120	Each = 80	Each = 45

2 grandmothers can share their 4 portions.

“Grandchildren” category: 10 and 1 are *tabayin*.

“Daughters” category: 12 and 16 are *tawafuq*.

“Wives” category: 4 and 3 are *tabayin*.

Number of heads of “grandchildren” and “wives” categories, 10 and 4 respectively are *tawafuq*. Apply Rule N.

Wafq of 10 and 4 = $10 \div 2 = 5 \times 4 = 20$; or $4 \div 2 = 2 \times 10 = 20$.

The *wafq* of “daughters” category is 3. How?

Actually, common divisors of 12 and 16 are 2 and 4.

Using 2, *wafq* of 12 daughters = $12 \div 2 = 6$

With 4, *wafq* of 12 daughters = $12 \div 4 = 3$

Recall that only the Highest Common Divisor (HCD) is considered. That is why the *wafq* of division by 4 is chosen.

Now, what is the relationship between the two adjusts (*wafqan*) 20 and 3?

They are *tabayin*. So, we multiply them (Rule U).

Finally, new base number = $20 \times 3 = 60 \times 24 = 1440$

New portion of 2 grandmothers: $1440 \times 1/6 = 240$

New portion of 12 daughters: $1440 \times 2/3 = 960$

New portion of 4 wives: $1440 \times 1/8 = 180$

New portion of 2 granddaughters and 4 grandsons: $1440 - (240 + 960 + 180) = 60$

Had it being 2 was chosen to be the common divisor of 12 and 16, the *wafq* of 12 daughters should have been 6 (as above). But then the new base number would be = $20 \times 6 = 120 \times 24 = 2880$ which is double of 1440. Note that 2880 is wrong, however the principle of base number is that the minimum value is used.

Rule W says, “Select any two SIMILAR categories and resolve them using the appropriate rule.” What happens if intentionally or otherwise, DISSIMILAR categories are selected first and resolved, will the new base number still be the same? Yes! Let’s prove it.

“Grandchildren” category: 10 and 1 are *tabayin*.

“Daughters” category: 12 and 16 are *tawafuq*.

“Wives” category: 4 and 3 are *tabayin*.

Instead of considering the two categories that are *tabayin* as before, let's resolve the “grandchildren” and “daughters” categories first. Since the number of heads and number of portions of grandchildren is *tabayin*, the emphasis shifts to the number of heads, 10. The *wafq* of 12 daughters is 3 (as explained earlier). Now, what is the relationship between 10 and 3? *Tabayin*. So, we multiply them (Rule Q).

$$10 \times 3 = 30$$

The number of heads and number of portions of 4 wives is also *tabayin*.

Again, the number of heads, 4, is considered. What is the relationship between 30 and 4? *Tawafiq*. Common divisor of 30 and 4 is 2. Therefore,

$$\text{New base number} = 30 \div 2 = 15 \times 4 = 60 \times 24 = 1440$$

$$\text{Alternatively, } 4 \div 2 = 2 \times 30 = 60 \times 24 = 1440$$

As a result, selecting and resolving similar or dissimilar categories of heirs that cannot share their portions do not make any difference. But choosing and resolving similar categories first simplify the problem.

Exercise 2

A deceased leaves behind two wives, five daughters and three full brothers. How will the estate be shared among them?

CHAPTER SEVEN

INHERITANCE OF GRANDFATHER ALONG WITH SIBLINGS

It is advised that the reader takes sometime to skim through Inheritance of Grandfather to better appreciate this chapter.

To start with, siblings are full brothers, full sisters, consanguine brothers and consanguine sisters. Uterine brothers and sisters are equally siblings but they do not inherit along with grandfather because he excludes them. Inheritance of grandfather can be divided into four (4) parts.

- i) Grandfather inherits along with full brother(s), full sister(s) or a combination of full brother(s) and full sister(s) in the ABSENCE of other heirs. Any conclusion made regarding the “fulls” also applies to their consanguine counterparts.
- ii) Grandfather inherits along with combination of “fulls” and “consanguines” in the ABSENCE of other heirs.
- iii) Grandfather inherits along with full brother(s), full sister(s) or a combination of full brother(s) and full sister(s) in the PRESENCE of other heirs. Any conclusion made also applies to their consanguine counterparts.
- iv) Grandfather inherits along with combination of “fulls” and “consanguines” in the PRESENCE of other heirs.

Inheritance of grandfather along with full brother(s), full sister(s) or a combination of full brother(s) and full sister(s) in the ABSENCE of other heirs

He has two choices: 1/3 of the estate or *muqasama* (sharing).

Example 35: Grandfather and full brother

- a) 1/3 of the estate

Heirs	Grandfather	Full brother
Shares	1/3	Residue
Base number		3
Portions	1	2

- b) *Muqasama*

Heirs	Grandfather	Full brother
Share	Whole estate	
Base number	Number of heads = 2	
Portions	1	1

Which of these options is more favourable to the grandfather? That is, which option entitles him to a larger portion of the estate? The number of portions he receives in both is 1. So how do we know which one is more favourable to him? To answer this, we have to determine the VALUE of each by making

the number of portions and base number the numerator and denominator respectively in both cases. Hence,

Value of portion if he inherits $1/3$ of estate = $1/3$

Value of estate if he agrees to *muqasama* = $1/2$

Therefore, *muqasama* is more beneficial to him.

Sometimes, dealing with fractions is tasking especially when one is to decide which one is larger and which one is smaller. For simplicity, it's recommended that fractions should be converted to decimal numbers. This can be done with the aid of a calculator. Using the example above, $1/3 = 0.33$ and $1/2 = 0.5$.

Deciding which decimal number is greater is quite easy. Remember how to arrange words in alphabetical order? If the first letters are the same, consider the second letters; if they are the same, look at the third letters; and so on. Same thing with numbers. Assuming we are asked to arrange 0.453, 0.345, 0.543 and 0.4512 in ascending order, the solution will be 0.345, 0.4513, 0.453 and 0.543.

Example 36: Grandfather and full sister

a) $1/3$ of the estate

Heirs	Grandfather	Full sister
Shares	$1/3$	$1/2$
Base number	6	
Portions	2	3
Values	$2/6 = 0.33$	$3/6 = 0.5$

There is 1 extra portion.

b) *Muqasama*

Heirs	Grandfather	Full sister
Shares	Whole estate	
Base number	3	
Portions	2	1
Values	$2/3 = 0.67$	$1/3 = 0.33$

Again, grandfather is advised to inherit by *muqasama*.

Note that grandfather is ACTING as a full brother that is why the base number (number of heads) is 3; he has "2 heads" and full sister has 1. So in essence, we have just one category of heirs. Had it being grandfather makes a category by himself, his number of heads should have been 1 as established in the previous chapter; that a male is considered to have "1 head" if a category consists of exclusive males.

Example 37: Grandfather, full brother and full sister

a) 1/3 of the estate

Heirs	Grandfather	Full brother; full sister
Shares	1/3	Residue
Base number		3
Portions	1	2
New base number		$3 \times 3 = 9$
New portions	3	Brother = 4; sister = 2
Values	$3/9 = 0.33$	Brother = 0.44; sister = 0.22

Full brother and sister cannot share their 2 portions. So, their number of heads, 3 multiplied by base number, 3 gives 9 (new base number).

b) *Muqasama*

Heirs	Grandfather	Full brother; full sister
Shares		Whole estate
Base number		Total number of heads = 5
Portions	2	Brother = 2; sister = 1
Values	$2/5 = 0.4$	Brother = 0.4; sister = 0.2

Muqasama is better for grandfather.

Example 38: Grandfather and 2 full brothers

a) 1/3 of the estate

Heirs	Grandfather	2 Full brothers
Shares	1/3	Residue
Base number		3
Portions	1	Each brother = 1
Values	$1/3 = 0.33$	Each brother = 0.33

b) *Muqasama*

Heirs	Grandfather	2 Full brothers
Shares		Whole estate
Base number		3
Portions	1	Each brother = 1
Values	$1/3 = 0.33$	Each brother = 0.33

Since grandfather gets 1/3 (0.33) of the estate in both cases, it makes no difference whether he takes 1/3 out-rightly or chooses to share the estate with the 2 brothers.

Example 39: Grandfather and 4 full sisters

a) 1/3 of the estate

Heirs	Grandfather	4 Full sisters
Shares	1/3	$2/3$
Base number		3
Portions	1	2

New base number	6	
New portions	2	Each sister = 1
Values	2/6 = 0.33	Each sister = 0.17

b) *Muqasama*

Heirs	Grandfather	4 Full sisters
Shares	Whole estate	
Base number	6	
Portions	2	Each sister = 1
Values	2/6 = 0.33	Each sister = 0.17

Given that the value of grandfather's portion is the same in both situations, he is at liberty to choose any. Observe that Examples 38 and 39 are virtually the same because the number of heads of those inheriting along with grandfather i.e. 2 full brothers and 4 full sisters respectively is 4! Similarly, the same scenario will play out if the surviving heirs are grandfather, 1 brother and 2 sisters of whatever combination. Confirm that please. Consequently,

Rule X: Whenever brother(s), sister(s) or a combination of brother(s) and sister(s) are inheriting along with grandfather, if their total number of heads is exactly 4, the value of grandfather's portion will be the same for both 1/3 of the estate and *muqasama*. Hence, anyone he chooses makes no difference.

Example 40: Grandfather and 3 full brothers

a) 1/3 of the estate

Heirs	Grandfather	3 Full brothers
Shares	1/3	Residue
Base number	3	
Portions	1	2
New base number	9	
New portions	3	Each brother = 2
Values	3/9 = 0.33	Each brother = 0.22

b) *Muqasama*

Heirs	Grandfather	3 Full brothers
Shares	Whole estate	
Base number	4	
Portions	1	3
Values	1/4 = 0.25	Each brother = 0.25

0.33 is greater than 0.25; so grandfather should take 1/3 of the estate.

Example 41: Grandfather and 5 full sisters

a) 1/3 of the estate

Heirs	Grandfather	5 Full sisters
Shares	1/3	2/3
Base number		3
Portions	1	2
New base number		15
New portions	5	Each sister = 2
Values	5/15 = 0.33	Each sister = 0.13

b) *Muqasama*

Heirs	Grandfather	5 Full sisters
Shares		Whole estate
Base number		7
Portions	2	Each sister = 1
Values	2/7 = 0.29	Each sister = 0.14

Again, 1/3 of the estate is more beneficial to the grandfather.

Example 42: Grandfather, 2 full brother and 3 full sisters

a) 1/3 of the estate

Heirs	Grandfather	2 Full brothers, 3 full sisters
Shares	1/3	Residue
Base number		3
Portions	1	2
New base number		21
New portions	7	Each brother = 4; each sister = 2
Values	7/21 = 0.33	Each brother = 0.19; each sister = 0.095

b) *Muqasama*

Heirs	Grandfather	2 Full brothers, 3 full sisters
Shares		Whole estate
Base number		9
Portions	2	Each brother = 2; each sister = 1
Values	2/9 = 0.22	Each brother = 0.22; each sister = 0.11

1/3 of the estate is better for the grandfather.

Rule Y: *Muqasama* is better for the grandfather whenever he inherits along with AT MOST

- a) 2 full brothers
- b) 2 consanguine brothers
- c) 4 full sisters
- d) 4 consanguine sisters

- e) 1 full brother and 2 full sisters
- f) 1 consanguine brother and 2 consanguine sisters; otherwise he should take 1/3 of the estate.

Inheritance of grandfather along with combination of “fulls” and “consanguines” in the ABSENCE of other heirs.

This is my favourite section. I particularly like the tricky nature of the rule.

Rule Z: When the surviving heirs of a deceased are grandfather and any combination of full brother(s) or sister(s) and consanguine brother(s) or sister(s), the “consanguines” ACT or BEHAVE as if they were “fulls.” When grandfather takes his portion of the estate, “consanguines” REVERT to their status and take THEIR ORIGINAL SHARES of the estate. The portion of each (i.e. “fulls” and “consanguines”) is determined USING THE BASE NUMBER.

Example 43: Grandfather, full brother and 3 consanguine sisters

Applying Rule Y, 1/3 of the estate will be more favourable to grandfather than *muqasama*, so we do not need to solve for *muqasama*. The first step is to modify the problem. It now becomes: grandfather, full brother and 3 “full” sisters (Rule Z).

Heirs	Grandfather	Full brother; 3 “full” sisters
Shares	1/3	Residue
Base number		3
Portions	1	2
New base number		15
New portions	5	Full brother = 4; each “full” sister = 2
Final portions	5	Full brother = 10; consanguine sisters = 0

Full brother and 3 “full” sisters cannot share 2 portions. Their number of heads (5) and number of portions (2) are *tabayin* (parallel). Therefore,

New base number = $5 \times 3 = 15$

New portion of grandfather = $15 \times 1/3 = 5$

New portion of full brother and 3 full sisters = $15 - 5 = 10$

Full brother gets 4 while each “full” sister inherits 2 portions.

Consanguine sisters then revert to their status. But then, full brother is originally a residuary by himself. **He excludes consanguine sisters and inherits the whole residue.** The implication is that consanguine sisters will surrender their portions to the full brother. Thus, their FINAL PORTIONS are: full brother = 10; consanguine sisters = 0

Example 44: Grandfather, 2 full sisters and consanguine brother

Number of heads of siblings is 4, so whichever option grandfather chooses makes no difference. Bear in mind that the problem becomes: grandfather, 2 full sisters and “full” brother; but it will not be indicated in the table as such.

a) 1/3 of the estate

Heirs	Grandfather	2 full sisters; consanguine brother
Shares	1/3	Residue
Base number		3
Portions	1	2
New base number		6
New portions	2	Each full sister = 1; consanguine brother = 2
Final portions	2	Each full sister = 2; consanguine brother = 0

Number of heads of 2 full sisters and consanguine brother, 4, converges with their number of portions, 2. So, new base number = 2 (adjust) \times 3 = 6. When consanguine brother reverts to his status, he becomes a residuary while full sisters are entitled to 2/3 of the estate. Hence, their final portion is $2/3 \times 6 = 4$ and each is given 2 portions. Since the estate is exhausted, consanguine brother gets nothing.

b) *Muqasama*

Heirs	Grandfather	2 Full sisters; consanguine brother
Shares		Whole estate
Base number		6
Portions	2	Each full sister = 1; consanguine brother = 2
Final portions	2	Each full sister = 2; Consanguine brother = 0

Example 45: Grandfather, 3 full sisters and 2 consanguine sisters

1/3 of the estate is more favourable for grandfather because number of heads of sisters is greater than 4.

Heirs	Grandfather	3 Full sisters; 2 consanguine sisters
Shares	1/3	Residue
Base number		3
Portions	1	2
New base number		15
New portions	5	Each full sister = 2; each consanguine sister = 2
Final portions	5	3 full sisters = 10; 2 consanguine sisters = 0

Newest base number	9	
Newest portions	3	Each full sister = 2

New base number = $5 \times 3 = 15$

New portion of grandfather = $15 \times 1/3 = 5$

New portion of 3 full sisters and 2 consanguine sisters = $15 - 5 = 10$

Original portion of 3 full sisters = $2/3 \times 15 = 10$

This means that 2 consanguine sisters will have nothing. But 3 full sisters cannot share their 10 portions, so another base number is determined once more. Number of heads of 3 full sisters (3) and their number of portions (10) is *tabayin*. Therefore, number of heads is multiplied by the base number. Another problem: there are two base numbers 3 and 15! What to do is to choose the one that will give a lower “newest” base number.

Newest base number = $3 \times 3 = 9$

Newest portion of grandfather = $9 \times 1/3 = 3$

Newest portion of 3 full sisters = $9 \times 2/3 = 6$; each sister is given 2 portions.

Inheritance of grandfather along with full brother(s), full sister(s) or a combination of full brother(s) and full sister(s) in the PRESENCE of other heirs.

In the presence of other heir(s), grandfather has three (3) choices. He is to choose whichever is most favourable to him. They are: 1/6 of the estate, 1/3 of the residue or *muqasama* (sharing). Note that Rules X and Y are not applicable here.

Example 46: Wife, grandfather and 3 full brothers

a) 1/6 of the estate

Heirs	Wife	Grandfather	3 Full brothers
Shares	$\frac{1}{4}$	$1/6$	Residue
Base number	12		
Portions	3	2	7
New base number	36		
New portions	9	6	Each brother = 7
Values	$63/252 = 0.25$	0.17	Each brother = 0.19

3 full brothers cannot share 7 portions. 3 and 7 are *tabayin*, so new base number = $3 \times 12 = 36$.

b) 1/3 of residue

Heirs	Wife	Grandfather	3 Full brothers
Shares	$\frac{1}{4}$	Residue	
Base number	4		
Portions	1	3	
New base number	48		

New portions	12	12	Each brother = 8
Newest base number	12		
Newest portions	3	3	Each brother = 2
Values	0.25	0.25	Each brother = 0.17

Number of heads of grandfather and 3 full brothers = 4, and they cannot share 3 portions. So, new base number = $4 \times 4 = 16$.

New portion of wife: $16 \times \frac{1}{4} = 4$

Residue = $16 - 4 = 12$

New portion of grandfather: $\frac{1}{3} \times 12 = 4$

Actual residue for 3 full brothers = $16 - (4 + 4) = 8$. But 3 brothers cannot share 8 portions. Once again, another base number is determined.

Newest base number = 3 (number of heads of 3 brothers) \times 4 (least base number) = 12

Newest portion of wife: $12 \times \frac{1}{4} = 3$

Residue = $12 - 3 = 9$

Newest portion of grandfather: $9 \times \frac{1}{3} = 3$

Newest portion of 3 full brothers (residue): $12 - (3 + 3) = 6$; each brother gets 2 portions.

c) *Muqasama*

Heirs	Wife	Grandfather	3 Full brothers
Share	$\frac{1}{4}$	Residue	
Base number	4		
Portions	1	3	
New base number	48		
New portions	12	Each = 9	
Values	0.25	Each = 0.19	

New portion of grandfather and 3 full brothers = $48 - 12 = 36$; each person gets $36 \div 4 = 9$ portions.

Remember that the value of portions is the variable considered to determine the best choice not the number of portions. Thus, $1/3$ of the residue is most favourable to grandfather since he will be entitled to 0.25 of the estate as against 0.17 or 0.19 if he has chosen $1/6$ of the estate or *muqasama* respectively.

Example 47: Husband, daughter, grandfather and full sister

a) $1/6$ of the estate

Heirs	Husband	Daughter	Grandfather	Full sister
Shares	$\frac{1}{4}$	$\frac{1}{2}$	$1/6$	Residue
Base number	12			
Portions	3	6	2	1
Values	$3/12 = 0.25$	0.5	0.17	0.08

Full sister becomes residuary with another.

b) $1/3$ of residue

Grandfather acts as a full brother.

Heirs	Husband	Daughter	Grandfather	Full sister
Shares	$\frac{1}{4}$	$\frac{1}{2}$	Residue	
Base number	4			
Portions	1	2	1	
New base number	12			
New portions	3	6	1	2
Values	$3/12 = 0.25$	0.5	0.08	0.17

New base number = $3 \times 4 = 12$

Residue = $12 - (3 + 6) = 3$ portions

Grandfather inherits $3 \times 1/3 = 1$ while full sister is given the remaining 2 portions.

c) *Muqasama*

Heirs	Husband	Daughter	Grandfather	Full sister
Shares	$\frac{1}{4}$	$\frac{1}{2}$	Residue	
Base number	4			
Portions	1	2	1	
New base number	12			
New portions	3	6	2	1
Values	$3/12 = 0.25$	0.5	0.17	0.08

Grandfather may choose either $1/6$ of the estate or inherit by *muqasama*.

Notice that he is inheriting along with only one full sister, yet his value of portion is the same for both options. That is why in the presence of other heirs, Rules X and Y are not applicable.

Inheritance of grandfather along with combination of “fulls” and “consanguines” in the PRESENCE of other heirs

Example 48: Mother, full sister, grandfather and 2 consanguine brothers

a) $1/6$ of the estate

Heirs	Mother	Full sister	Grandfather	2 Consanguine brothers
Shares	$1/6$	$\frac{1}{2}$	$1/6$	Residue
Base number	6			
Portions	1	3	1	1
New base number	12			
New portions	2	6	2	2
Values	0.17	0.5	0.17	Each = 0.085

b) 1/3 of residue

Heirs	Mother	Full sister	Grandfather	2 Consanguine brothers
Shares	1/6		Residue	“Excluded”
Base number			6	
Portions	1		5	
New base number			18	
New portions	3	10	5	
Values	0.17	0.56	0.28	

$$\text{New base number} = 3 \times 6 = 18$$

$$\text{Residue} = 18 - 3 = 15$$

$$\text{Number of portions of mother: } 18 \times 1/6 = 3$$

$$\text{Grandfather is given } 15 \times 1/3 = 5 \text{ portions}$$

$$\text{Full sister receives } 15 - 5 = 10 \text{ portions}$$

c) *Muqasama*

Grandfather acts as full brother. As a result, consanguine brothers are excluded.

Heirs	Mother	Full sister	Grandfather	2 Consanguine brothers
Shares	1/6		Residue	“Excluded”
Base number			6	
Portions	1		5	
New base number			18	
New portions	3	5	10	
Values	0.17	0.28	0.56	

Muqasama is better for grandfather. And the interesting thing is that no heir has the right to oppose any choice he makes. In this example for instance, the two consanguine brothers are not allowed to persuade the grandfather to take 1/6 of the estate, since by *muqasama* or 1/3 of residue they will have nothing.

It is necessary to determine the number of portions and value of the estate grandfather is entitled to in all three cases before reaching a conclusion; otherwise, he will be wrongly excluded when he should actually be entitled to a share. The following exercise will prove that.

Exercise 3

A woman leaves behind her husband, two daughters, mother, grandfather and full brother. How will the estate be shared among them?

CHAPTER EIGHT

SPECIAL CASES

'Umariyyataini (the two 'Umar cases)

Supposing a deceased is survived by his parents (mother and father) only, how will his estate be distributed among them?

Heirs	Mother	Father
Shares	1/3	Residue
Base number	3	
Portions	1	2

This shows that father inherits twice the share of mother in the absence of children or any descendant through son. Now consider the following:

Case 1: A man dies leaving behind a wife, mother and father

Heirs	Wife	Mother	Father
Shares	1/4	1/3	Residue
Base number	12		
Portions	3	4	5

Case 2: A woman is survived by her husband, mother and father

Heirs	Husband	Mother	Father
Shares	1/2	1/3	Residue
Base number	6		
Portions	3	2	1

Observe that in Case 1, the number of portions of mother is almost the same with that of the father; while in Case 2, her number of portions doubles his. Though the distributions are correct, they violate the principle that father gets twice the share or number of portions of mother in the absence of children or descendants through son. These pair of problems arose during the Caliphate of 'Umar. That is why they are symbolically referred to as '*'Umariyyataini*.

The resolution was that instead of giving mother 1/3 of the estate, she should be given 1/3 OF THE RESIDUE so as to maintain the ratio of 2 to 1 between father and mother. Therefore, Case 1 becomes

Heirs	Wife	Mother	Father
Shares	1/4	Residue	
Base number	4		
Portions	1	1	2

$$\text{Residue} = 4 - 1 = 3$$

$$\text{Mother inherits } 3 \times 1/3 = 1 \text{ portion}$$

$$\text{Father is given } 4 - (1 + 1) = 2 \text{ portions}$$

Similarly, Case 2 can be resolved as follows

Heirs	Husband	Mother	Father
Shares	$\frac{1}{2}$	Residue	
Base number	2		
Portions	1	1	
New base number	6		
New portions	3	1	2

$$\text{Residue} = 6 - 3 = 3$$

$$\text{New portion of mother: } 3 \times \frac{1}{3} = 1$$

$$\text{New portion of father: } 6 - (3 + 1) = 2$$

Recall that in the absence of a son, the grandson takes his place and inherits all his rights and privileges. Likewise, in the absence of father, grandfather replaces him but does not inherit all his privileges according to the more popular view of scholars. As stated earlier, this is because father excludes full and consanguine siblings but grandfather cannot exclude them. ‘Umariyyataini is another. Unlike father, grandfather does not have the “power” to relegate mother from $\frac{1}{3}$ of the estate to $\frac{1}{3}$ of the residue. Therefore, if grandfather were to take the place of father in Cases 1 and 2, he will be given 5 and 1 portions respectively. Adjustments shall not be made.

Mushtarika (Partnership)

Problem: A lady leaves behind her husband, mother, two uterine brothers and a full brother. How will her estate be distributed?

Solution:

Heirs	Husband	Mother	2 uterine brothers	Full brother
Shares	$\frac{1}{2}$	$\frac{1}{6}$	$\frac{1}{3}$	Residue
Base number	6			
Portions	3	1	2	0

This also arose during the time of ‘Umar. Despite that the distribution was correct; full brother protested on the ground that he was more related to the deceased than the uterine brothers since he has the same father and mother with her whereas uterine brothers have the same mother with her only. As a result, it is not fair for the uterines to be entitled to a portion of the estate while he is being left out. ‘Umar reasoned with him and instructed that he shares $\frac{1}{3}$ along with uterine brothers in equal proportion. The final table then becomes

Heirs	Husband	Mother	2 uterine brothers	Full brother
Shares	$\frac{1}{2}$	$\frac{1}{6}$	$\frac{1}{3}$	Residue
Base number	6			
Portions	3	1	2	0
New base number	$3 \times 6 = 18$			
New portions	9	3	Each brother = 2	

Imams Malik and As-Shafi'i supported this verdict though Ahmad ibn Hanbal and Abu Hanifa opposed it for the fact that full brother is a residuary who by definition inherits the whole estate when alone or takes the residue, and if nothing is left (as in this problem), he goes empty handed.

Whereas the two 'Umar cases are "heir-specific" i.e. applicable when the heirs are wife, mother and father ONLY or husband, mother and father ONLY, partnership is also applicable when the following are present:

- i) More than two uterine brothers, two or more uterine sisters or a combination of uterine brother(s) and sisters(s) because they all inherit 1/3 of the estate.
- ii) More than one full brother or a combination of full brother(s) and full sister(s) since they are equally entitled to residue.

Mushtarika does not apply if the heirs comprises of:

- i) One uterine brother or sister given that he/she gets 1/6 of the estate and this will distort the problem.
- ii) One or more full sisters ONLY. The reason is that they have fixed shares.
- iii) One or more consanguine brother(s) or sister(s). Though they are also residuaries, but are related to the deceased through the father only.

Al-Akdariyya (Troublesome)

Problem: A woman is survived by her husband, mother, grandfather and full sister. (Consanguine sister may replace a full sister and the rule of *Akdariyya* will still be valid).

Solution: Since grandfather is involved, the three options have to be considered.

- a) 1/6 of the estate

Heirs	Husband	Mother	Grandfather	Full sister
Shares	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{6}$	$\frac{1}{2}$
Base number	6			
Portions	3	2	1	3
Increased base number	9			
Values	$3/9 = 0.33$	0.22	0.11	0.33

- b) 1/3 of residue

Heirs	Husband	Mother	Grandfather	Full sister
Shares	$\frac{1}{2}$	$\frac{1}{3}$	Residue	
Base number	6			
Portions	3	2	1	
New base number	$3 \times 6 = 18$			
New portions	9	6	1	2

	Values	0.5	0.33	0.06	0.11
c) <i>Muqasama</i>					
Heirs	Husband	Mother	Grandfather	Full sister	
Shares	$\frac{1}{2}$	$\frac{1}{3}$		Residue	
Base number			6		
Portions	3	2		1	
New base number			18		
New portions	9	6	2	1	
Values	0.5	0.33	0.11	0.06	

Grandfather acts as a full brother, so he takes twice the portion of full sister. Thus, he inherits 2 portions out of the 3 residues, while full sister is given 1. Conclusion: Grandfather may inherit either 1/6 of the estate or by *muqasama*.

A closer look at the two options will reveal that in *muqasama*, grandfather (acting as a full brother) gets twice the portion of full sister. That is alright. But if he decides to take 1/6 of the estate, full sister's portion is not only double but three times his portion. That is one way of looking at it. The second is that if the shares of husband, mother and grandfather are added together, the estate gets exhausted and full sister receives nothing. That is, $\frac{1}{2}(0.5) + \frac{1}{3}(0.33) + \frac{1}{6}(0.17) = 1$.

This is also not acceptable according to most Jurists because full sister cannot be excluded by husband, mother or grandfather. For this reason, the problem is referred to as "troublesome."

The resolution is that grandfather should agree to 1/6 of the estate but then, his portion and that of full sister will be added and redistributed among them in a ratio of 2 to 1. Thus,

$$\text{Number of portion of grandfather and full sister} = 1 + 3 = 4$$

Grandfather and full sister cannot share 4 portions.

Their number of heads, 3, and number of portions, 4, are *tabayin*. Therefore,

$$\text{New base number} = 3 \times 9 \text{ (increased base number)} = 27$$

$$\text{New share of husband} = 3/9$$

$$\text{New share of mother} = 2/9$$

$$\text{New share of grandfather} = 1/9$$

$$\text{New share of full sister} = 3/9$$

$$\text{New portion of husband: } 27 \times 3/9 = 9$$

$$\text{New portion of mother: } 27 \times 2/9 = 6$$

$$\text{New portion of grandfather: } 27 \times 1/9 = 3$$

$$\text{New portion of full sister: } 27 \times 3/9 = 9$$

Now, add new portions of grandfather and full sister: $3 + 9 = 12$. Grandfather gets twice the portion of full sister. 12 is divided by 3. He takes 2 parts while she is given remaining 1 part. Mathematically,

$$\text{Newest portion of grandfather: } 12 \times 2/3 = 8$$

Newest portion of full sister: $12 \times 1/3 = 4$

Heirs	Husband	Mother	Grandfather	Full sister
Shares	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{6}$	$\frac{1}{2}$
Base number	6			
Portions	3	2	1	3
Increased base number	9			
New base number	27			
New shares	$\frac{3}{9}$	$\frac{2}{9}$	$\frac{1}{9}$	$\frac{3}{9}$
New portions	9	6	3	9
Newest portions	9	6	8	4
Values	$9/27 = 0.33$	0.22	0.30	0.15

Observe that we deviated from the principle that number of heads should be multiplied by the lowest base number in order to generate a new base number. This is because there was an increase in the base number ('awl), so number of heads is multiplied by the increment. Also, note that the value of grandfather's portion is greater than what he should have received through *muqasama*. This was how the problem was solved by Zaid ibn Thabit, the most knowledgeable companion of the Holy Prophet (peace be upon him) in the Science of Inheritance. May Allah be pleased with them all. *Ameen*.

SUMMARY

Level	Property	How to determine base number
1(a)	One category of heir; no fixed share	Rule A: Number of heads
1(b)	One category of heir with a fixed share	Rule B: Denominator of the share
1(c)	Two categories of heirs; one has a fixed share	Rule C: Denominator of the share
1(d)	Two or more categories of heirs; at least two have fixed shares	Consider the denominators of the two shares Rule D: If they are the same (<i>tamathul</i>), choose one Rule E: If one is a multiple of the other (<i>tadakhul</i>), select the higher one Rule F: If they are parallel (<i>tabayin</i>), multiply them Rule G: If they converge (<i>tawafuq</i>), multiply one with the adjust (<i>wafq</i>) of the other
'Awl	Sum of portions greater than base number	Rule H: Sum of portions

2(a)	One category of heir cannot share its portion	Consider number of heads and number of portions of the category. Rule I: If parallel (<i>tabayin</i>), multiply number of heads by base number (BN) to get new base number (NBN) Rule J: If they converge (<i>tawafuq</i>), multiply adjust (of number of heads) by BN to arrive at a NBN NOTE: There can be no <i>tamathul</i> or <i>tadakhul</i> in this level.
2(b)	Two categories of heirs cannot share their portions ; while number of heads and corresponding number of portions of BOTH categories are <i>tabayin</i>	Consider number of heads of the two categories Rule K: If <i>tamathul</i> , select any and multiply by BN. Solution is NBN Rule L: If <i>tadakhul</i> , multiply the higher one by the BN to get NBN Rule M: If <i>tabayin</i> , multiply them, then multiply the answer by the BN. Outcome is NBN Rule N: If <i>tawafuq</i> , multiply <i>wafq</i> of one with the other, then multiply the result with the BN to arrive at a NBN
2(c)	Two categories of heirs cannot share their portions; however, number of heads and number of portions of one category are <i>tawafuq</i> while number of heads and number of portions of the other category are <i>tabayin</i>	Consider the <i>wafq</i> (of number of heads) of the <i>tawafuq</i> category along with the number of heads of <i>tabayin</i> category Rule O: If <i>tamathul</i> , chooses any and multiply by BN to get NBN Rule P: If <i>tadakhul</i> , select the higher one and multiply it by the BN. Result is NBN Rule Q: If <i>tabayin</i> , multiply them, then further multiply the answer by the BN to arrive at a NBN Rule R: If <i>tawafuq</i> , multiply <i>wafq</i> of one by the other. Further multiply the result by BN to determine the NBN
2(d)	Two categories of heirs cannot share their portions; but, number of heads and corresponding number of portions of BOTH categories are <i>tawafuq</i>	Consider the <i>wafq</i> of both categories Rule S: If <i>tamathul</i> , pick any and multiply by the BN to obtain a NBN Rule T: If <i>tadakhul</i> , multiply the base number by the higher one to generate a NBN Rule U: If <i>tabayin</i> , multiply the two <i>wafqan</i> , thereafter, multiply the answer by the BN to get a NBN Rule V: If <i>tawafuq</i> , multiply the <i>wafq</i> of

		one with the other. Subsequently, multiply the solution with the BN. Result is the NBN
3	Three or more categories of heirs cannot share their portions; number of heads and corresponding number of portions of each may either be <i>tabayin</i> or <i>tawafuq</i>	<p>Consider number of heads of <i>tabayin</i> category and the <i>wafq</i> of <i>tawafuq</i> category</p> <p>Rule W: No precise procedure to determine base number, but suggestion is; pick any two categories that are SIMILAR. If they are <i>tabayin</i>, resolve them using the appropriate rule (K, L, M or N) to get a solution 'X'. If they are <i>tawafuq</i> apply the suitable Level 2(d) rule: S, T, U or V, to obtain a solution 'X'. Then consider 'X' along with the number of heads or <i>wafq</i> of the third category depending on the relationship of its number of heads and number of portions. If <i>tabayin</i>, use its number of heads but if <i>tawaqif</i>, use its <i>wafq</i>. Apply the correct rule. This new answer is 'Y'. If there are more categories that cannot share their portions, follow the same procedure to resolve all of them. Finally multiply the last result by the BN to determine a NBN</p>

FURTHER READING

1. *Radd* (Decrease of base number)

This is the opposite of ‘awl. *Radd* is applicable when the heirs cannot exhaust the estate, thus the base number is decreased so as to proportionately increase the share of each heir. Though there are particular heirs who are not entitled to or do not benefit from *radd*.

2. Inheritance of cognates (*Zawul-Arham*)

When rightful heirs do not exhaust the estate and *radd* is not applied, cognates are invited to inherit from the rest. The most popular opinion is that cognate children step into the shoes of their agnate parents. For instance, daughter’s son who is a non-heir is given the share of a daughter. Cognates are classified into 4 and they also exclude one another.

3. *Munasakha* (2-in-1 inheritance)

Say a man passes on leaving behind his wife and children. Before his estate is distributed, the wife also dies. Note that although the wife is absent, she will still inherit from the husband because she was alive at the time he died. So, the husband’s estate will be distributed among the wife and children. Thereafter, wife’s estate will be shared among the children. But instead of doing this one after the other, the two distributions can be at once. It’s a bit complex especially if the second deceased have heirs who are not entitled to inherit from the first deceased.

4. *Takharuj* (Removal)

An agreement between one of the heirs and the rest, that if he is given a specific item FROM or OUTSIDE the estate, he will relinquish his whole share of the estate.

5. Inheritance of foetus

A foetus may either be a significant or non-significant heir. Significant in the sense that if delivered alive, some heirs will be excluded. In that case, it is preferred that the estate is not shared until it is born. However, if the estate has to be distributed, some rules will apply.

6. Inheritance of a missing person

A missing person can either be the one to be inherited or the heir. If he is to be inherited his estate shall not be allotted to his heirs until he attains 70 years of age (or 90 according to some Jurists). But before then, if some rules are satisfied, the estate can be shared. On the other hand, when an important heir that can distort the sharing formulae such as a son is missing, unless he is officially pronounced dead by a court of law (after Shari’ah-accepted due process has been followed), no one will inherit from the estate of the deceased. However, if it has to be apportioned, some rule will come to play.

7. Inheritance of a controversial heir

A person who claims to be an heir of a deceased such that the claim is accepted by some heirs and rejected by others is said to be a controversial heir. The estate will be distributed in such a way that those that reject the controversial heir will get their full shares, while the share of those that accept him will be deducted and given to him.

8. Inheritance of a hermaphrodite

Hermaphrodites may either be partial or total. A Partial hermaphrodite is considered to be a male or female depending on the organ that is functional or more functional. However, if both are functional in the same proportion, the individual is said to be a total hermaphrodite and is given half of both male and female portions of inheritance. Hence, its number of heads is 1½.

SOLUTIONS TO EXERCISES

Exercise 1

Heirs	2 daughters	Mother	Father
Shares	2/3	1/6	1/6 + residue
Base number	6		
Portions	Each daughter = 2	1	1

Note that brother and sister are excluded by father.

2 daughters: $6 \times 2/3 = 4$ portions. Each daughter inherits 2.

Mother: $6 \times 1/6 = 1$ portion

Father: $6 \times 1/6 = 1$ portion

Check for residue: $6 - 4 - 1 - 1 = 0$ or $6 - (4 + 1 + 1) = 0$

Since there is no residue, the father receives just 1 portion like the mother.

Exercise 2

Heirs	2 Wives	5 Daughters	3 Full brothers
Shares	1/8	2/3	Residue
Base number	$8 \times 3 = 24$		
Portions	3	16	5
New base number	$2 \times 5 \times 3 \times 24 = 720$		
New portions	Each = 45	Each = 96	Each = 50

None of the three categories of heirs can share their portions. So let's consider the relationship between their number of heads and number of portions.

“Wives” category: 2 and 3 are *tabayin* (parallel)

“Daughters” category: 5 and 16 are *tabayin* (parallel)

“Full brothers” category: 3 and 5 are *tabayin* (parallel)

Since all of them are parallel, their number of heads is considered. Taking wives and daughters first, 2 and 5 are *tabayin*, so multiply them. $2 \times 5 = 10$. Now what is the relationship between 10 and 3 (heads of full brothers)?

Tabayin. Again, multiply them. $10 \times 3 = 30$.

Hence, new base number = $30 \times 24 = 720$

New portion of 2 wives: $720 \times 1/8 = 90$; each has 45

New portion of 5 daughters: $720 \times 2/3 = 480$; each is given 96

New portion of 3 full brothers: $720 - (90 + 480) = 150$; each inherits 50.

Exercise 3

a) 1/6 of the estate

Heirs	Husband	2 Daughters	Mother	Grandfather	Full brother
Shares	1/4	2/3	1/6	1/6	Residue
Base number	12				
Portions	3	8	2	2	0
Increased base number	15				

Values	0.2	0.53	0.13	0.13	0
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b) 1/3 of residue

Heirs	Husband	2 Daughters	Mother	Grandfather	Full brother
Shares	$\frac{1}{4}$	$\frac{2}{3}$	$\frac{1}{6}$	Residue	
Base number			12		
Portions	3	8	2	0	
Increased base number			13		
Values	0.23	0.62	0.15	0	0

There is no residue, so 1/3 of residue does not exist. Hence, grandfather and full brother inherits nothing.

c) *Muqasama*

Here, grandfather is expected to share the residue with full brother. But from the table above, there will be no residue to share. Hence grandfather and full brother gets nothing. Therefore, 1/6 of the estate is the most favourable to grandfather. The two other options do not entitle him to any share of the estate.

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