Determining the Base Number and Correcting the Shares (al-Taʾṣīl wa-l-Taṣḥīḥ)

First: Determining the Base Number (al-Taʾṣīl)

Definition

Taʾṣīl means determining the base number of an inheritance case. It consists in finding the smallest number from which the shares of all heirs can be calculated without fractions, since inheritance calculations require whole numbers.

Methods of Determining the Base Number

To determine the base number, we first examine the heirs. They may either all be residuary heirs or include Quranic sharers.

Category One: When All Heirs Are Residuary Heirs

If all the heirs are residuary heirs in their own right, the base number is equal to the total number of their heads.

For example, if the deceased leaves five sons or five brothers, the base number in either case is five.

If the heirs include both residuary heirs in their own right and residuary heirs through another, the base number is calculated by counting each male as two shares and each female as one.

For example, if the deceased leaves one son and three daughters, the base number is five.

Category Two: When All Heirs Are Quranic Sharers, or Include Residuary Heirs

In this situation, the base number is one of seven possible numbers:

2, 3, 4, 6, 8, 12 and 24.

These numbers are derived from the denominators of the prescribed shares.

The prescribed shares established in the Qur'an are:

- One-half (1/2)
- One-quarter (1/4)
- One-eighth (1/8)
- One-third (1/3)
- Two-thirds (2/3)
- One-sixth (1/6)

When these shares occur individually, they give rise to the seven base numbers, except for 12 and 24, which arise when certain prescribed shares occur together.

This makes it easier to determine the base number.

- If a case contains only one Quranic sharer, the denominator of that heir's prescribed share becomes the base number.

For example, if the deceased leaves a daughter and a full brother, the daughter receives one-half and the remainder goes to the brother. The base number is therefore 2.

- If a case contains more than one prescribed share, the base number is the least common multiple of their denominators.

There are two methods for determining it.

Method One: Classifying the Prescribed Shares into Two Groups

The prescribed shares may be divided into two groups:

First group:

1/2, 1/4 and 1/8.

Second group:

1/3, 2/3 and 1/6.

If all the prescribed shares in a case belong to the first group alone, or to the second group alone, the base number is the largest denominator among them.

For example:

- If the case includes 1/2 and 1/4, its base number is 4.
- If it includes 1/4 and 1/8, its base number is 8.

However, if the case includes prescribed shares from both groups, the following rules apply.

1. Combining One-Half with Shares from the Second Group

If one-half from the first group is combined with all or some of the shares in the second group, the base number is 6.

2. Combining One-Quarter with Shares from the Second Group

If one-quarter from the first group is combined with all or some of the shares in the second group, the base number is 12.

3. Combining One-Eighth with Shares from the Second Group

If one-eighth from the first group is combined with all or some of the shares in the second group, the base number is 24.

Method Two: Determining the Least Common Multiple

This method does not require classifying the prescribed shares into two groups. Instead, the base number is determined by considering two denominators at a time and identifying the numerical relationship between them.

There are four possible relationships:

1. Equality (al-tamāthul).
2. Divisibility (al-tadākhul).
3. Compatibility (al-tawāfuq).
4. Mutual exclusivity (al-tabāyun).

The rules for each are as follows:

1. Equality (al-tamāthul)

This occurs when two numbers are equal in value, so that neither is greater than the other.

In this case, either denominator may be taken as the base number.

2. Divisibility (al-tadākhul)

This occurs when the larger number is divisible by the smaller without leaving a remainder.

In this case, the larger number alone is taken as the base number.

3. Compatibility (al-tawāfuq)

This occurs when neither number is divisible by the other, but both are divisible by a common number greater than one.

In this case, the base number is obtained by multiplying the quotient of either number by the other number in full.

For example, if the denominators are 6 and 4, they are compatible by one-half:

$4 \div 2 = 2$; then $6 \times 2 = 12$.

Alternatively:

$6 \div 2 = 3$; then $4 \times 3 = 12$.

Thus, the base number is 12.

4. Mutual Exclusivity (al-tabāyun)

This occurs when neither number is divisible by the other and they have no common divisor other than one.

In this case, the base number is obtained by multiplying the two numbers together.

For example, the denominators 3 and 4 are mutually exclusive. Therefore:

$3 \times 4 = 12$.

The four relationships can be summarized as follows:

- Equal numbers: their common multiple is either one of them.
- Divisible numbers: their common multiple is the larger number.
- Compatible numbers: their common multiple is the quotient of one multiplied by the other in full.
- Mutually exclusive numbers: their common multiple is the product of the two numbers.

Second: Correcting the Shares (al-Taṣḥīḥ)

Definition

Taṣḥīḥ means finding the smallest number from which each heir's share can be distributed without fractions.

Method of Correction

Correction is achieved by finding the smallest number which, when multiplied by the base number of the inheritance case, produces a number divisible among the entitled heirs without any remainder.

A division problem may occur among one group of heirs, two groups, or more. The number of groups affected by such a problem does not exceed four.

This applies to those schools that recognize more than two grandmothers as potential heirs. According to the Maliki school, which does not recognize inheritance by more than two grandmothers, the number of groups affected does not exceed three.

A group of heirs may also be referred to as a *team*, *category*, *class*, or *group*, and the term may sometimes refer to the number of individuals (heads) within that group.

1. When the Shares Cannot Be Divided among the Members of One Group

If the shares allocated to a single group cannot be divided equally among its members, we examine whether the number of shares and the number of members are mutually exclusive or compatible.

A. If the two numbers are mutually exclusive

We multiply the number of individuals in the group by the base number of the inheritance case, or by its increased base number if the case involves *ʿawl*. This produces a corrected base number from which the shares can be distributed without fractions.

For example, if the deceased leaves a wife, a son and a daughter, the wife receives one-eighth, while the son and daughter receive the residue as residuary heirs.

The original base number is 8. The wife receives one share, while the son and daughter share the remaining seven shares. These seven shares cannot be divided among the three individuals.

We therefore multiply the number of individuals (3) by the original base number (8):

$3 \times 8 = 24$.

The corrected base number is 24.

We then multiply each heir's original share by 3:

- Wife: 1 × 3 = 3 shares.
- Son and daughter: 7 × 3 = 21 shares.

The son receives 14 shares, and the daughter receives 7 shares.

The inheritance case is thus corrected without fractions.

B. If the two numbers are compatible

We multiply the quotient of the number of individuals by the original base number, or by the increased base number where applicable. This produces a corrected base number from which the shares can be distributed without fractions.

For example, a woman dies leaving a husband, six full sisters and two uterine brothers.

The original base number is 6, and the case undergoes *ʿawl*, increasing it to 9.

The husband receives 3 shares, the full sisters receive 4 shares, and the two uterine brothers receive 2 shares.

When we compare the shares allocated to the full sisters with their number, we find that the four shares cannot be divided equally among the six sisters.

Completion of the Example: Compatible Numbers

In this case, the number of shares and the number of heirs are compatible by one-half. We therefore multiply half the number of heirs (3) by the increased base number (9), giving 27.

Each heir's original share is then multiplied by 3:

- Husband: 3 × 3 = 9 shares.
- Two uterine brothers: 2 × 3 = 6 shares.
- Six full sisters: 4 × 3 = 12 shares.

Each full sister consequently receives two shares.

Examples of Correcting Inheritance Cases

Example 1
A deceased person leaves:

- A wife.
- A mother.
- One son.
- Two daughters.

The wife receives one-eighth, the mother one-sixth, and the children inherit the residue as residuary heirs, with the son receiving twice the share of each daughter.

The original base number is 24, and the corrected base number is 96.

Heir	Original share	Corrected share
Wife	3	12
Mother	4	16
Son	—	34
First daughter	—	17
Second daughter	—	17

Example 2

A deceased person leaves:

- A wife.
- A grandmother.
- A daughter.
- A full brother.
- A full sister.

The wife receives one-eighth, the grandmother one-sixth, and the daughter one-half. The full brother and full sister inherit the residue as residuary heirs, with the male receiving twice the female's share.

The original base number is 24, and the corrected base number is 36.

Heir	Corrected share
Wife	9
Grandmother	6
Daughter	18
Full brother	2
Full sister	1

Example 3

A deceased person leaves:

- A mother.
- A daughter.
- A full brother.
- Two full sisters.

The mother receives one-sixth, the daughter one-half, and the full siblings inherit the residue as residuary heirs.

The original base number is 6, and the corrected base number is 12.

Heir	Corrected share
Mother	2
Daughter	6
Full brother	2

Heir	Corrected share
First full sister	1
Second full sister	1

Further Examples

1. A husband, a mother, two full brothers and two full sisters.
2. Four wives and one son.
3. A husband, a maternal grandmother, a paternal grandmother, a uterine brother and a uterine sister.
4. A daughter, a son's daughter and four full sisters.

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2. When the Shares Cannot Be Divided among Two Groups of Heirs

When the division problem affects two groups of heirs, we examine each group separately, comparing the number of shares allocated to that group with the number of its members. We then determine whether the two numbers are equal, divisible, compatible or mutually exclusive.

We repeat the same procedure for the second group.

After determining the number to be retained for each group, we compare the two retained numbers:

- If they are equal, we use either one.
- If one is divisible by the other, we use the larger number.
- If they are compatible, we multiply the quotient of one by the other in full.
- If they are mutually exclusive, we multiply them together.

The resulting number is then multiplied by the original base number or its increased value, producing the corrected base number.

Examples

Example 1
A deceased person leaves:

- Three wives.
- Two sons.
- One daughter.

The wives collectively receive one-eighth, while the children inherit the residue as residuary heirs, with each son receiving twice the daughter's share.

The original base number is 8, and the corrected base number is 120.

Heir	Corrected share
Three wives collectively	15
First son	42
Second son	42
Daughter	21

Example 2

A deceased person leaves:

- Three wives.
- Two sons.
- Two daughters.

The wives collectively receive one-eighth, and the children inherit the residue as residuary heirs.

The original base number is 8, and the corrected base number is 48.

Heir	Corrected share
Each wife	2
First son	14
Second son	14
First daughter	7
Second daughter	7

Example 3

A deceased person leaves:

- A mother.
- Three full sisters.
- One paternal half-brother.
- Two paternal half-sisters.

The mother receives one-sixth, and the full sisters collectively receive two-thirds. The paternal half-brother and paternal half-sisters inherit the residue as residuary heirs, with the male receiving twice the female's share.

The original base number is 6, and the corrected base number is 72.

Heir	Corrected share
Mother	12
Each full sister	16
Paternal half-brother	6
Each paternal half-sister	3

Further Examples

1. Three daughters and three full sisters.
2. A maternal grandmother, a paternal grandmother, two wives, one son and one daughter.

3. A husband, three daughters and two full sisters.
4. Two uterine brothers, two uterine sisters, one full sister and six paternal uncles.

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3. When the Division Problem Affects Three or Four Groups of Heirs

If the division problem affects three or four groups, the preceding methods must be applied to each group separately.

First, we compare the shares allocated to each group with the number of its members, determining whether the numbers are compatible or mutually exclusive, and calculating the number to be retained for each group.

We then compare these retained numbers with one another, identifying whether they are equal, divisible, compatible or mutually exclusive.

The applicable rules are used to obtain the least common multiple of the retained numbers. This number is then multiplied by the original base number or its increased value.

Examples

Example 1
A deceased person leaves:

- Three son's daughters.
- Two full sisters.
- A maternal grandmother.
- A paternal grandmother.

The original base number is 6, and the corrected base number is 36.

Heir	Corrected share
Each son's daughter	8
Each full sister	3
Maternal grandmother	3
Paternal grandmother	3

Example 2
A deceased person leaves:

- Two wives.
- Three full sisters.
- One paternal half-brother.
- One paternal half-sister.

The original base number is 12, and the corrected base number is 72.

Heir	Corrected share
Each wife	9
Each full sister	8
Paternal half-brother	4
Paternal half-sister	2

Example 3

A deceased person leaves:

- Two wives.
- Three paternal half-sisters.
- Two uterine brothers.
- One uterine sister.

The original base number is 15, and the corrected base number is 90.

Heir	Corrected share
Each wife	9
Each paternal half-sister	16
Each uterine brother	8
Uterine sister	8

Example 4

A deceased person leaves:

- Two wives.
- One uterine brother.
- Two uterine sisters.
- Three full sisters.
- A maternal grandmother.
- A paternal grandmother.
- A paternal grandfather's mother.

The original base number is 17, and the corrected base number is 102.

Heir	Corrected share
Each wife	9
Uterine brother	8
Each uterine sister	8
Each full sister	16
Maternal grandmother	4
Paternal grandmother	4
Paternal grandfather's mother	4

Example 5

Heir	Share
Wife	1/8
Wife	1/8
Wife	1/8
Son's daughter	—
Son's daughter	—
Son's daughter	—
Maternal grandmother	1/6
Paternal grandmother	1/6
Grandfather's mother	1/6
Full sister	Residue
Full sister	Residue

Example 6

Heir	Share
Wife	1/4
Wife	1/4
Maternal grandmother	1/6
Paternal grandmother	1/6
Grandfather's mother	1/6
Uterine sister	1/3 collectively
Uterine sister	1/3 collectively
Uterine sister	1/3 collectively
Full paternal uncle	Residue
Full paternal uncle	Residue

Practical Exercises

1. Two wives, three son's daughters, a paternal half-brother, and a paternal half-sister.
2. Two wives, three full sisters, and two full paternal uncles.
3. Two wives, three daughters, and a full brother.
4. Two grandmothers, a uterine brother, two uterine sisters, and two paternal half-brothers.
5. Four wives, three grandmothers, five daughters, and two paternal half-sisters.

Miscellaneous Practical Exercises

The Different Cases of the Son's Daughter

Case 1

Heir	Share
Wife	1/8
Mother	1/6
Daughter	1/2
Son's daughter	1/6
Full paternal uncle	Residue

Case 2

Heir	Share
Wife	1/8
Mother	1/6
Son's daughter	1/2
Full brother	Residue

Case 3

Heir	Share
Wife	1/8
Mother	1/6
Son's daughter	Residue together with the son's son
Son's son	Residue together with the son's daughter

Case 4

Heir	Share
Husband	1/4
Daughter	1/2
Son's daughter	1/6
Son's great-grandson through a son	Residue

Case 5

Heir	Share
Mother	1/6
Daughter	1/2
Three son's daughters	1/6 collectively
Son's great-grandson through a son	Residue

Case 6

Heir	Share
Father	1/6
Mother	1/6
Four son's daughters	2/3 collectively
Son's great-grandson through a son	Excluded

Case 7

Heir	Share
Daughter	1/2
Son's daughter	1/6
Son's granddaughter	1/6
Son's great-grandson through a son	Residue

Case 8

Heir	Share
Two son's daughters	2/3 collectively
Son's granddaughter through a son	Residue together with a male descendant
Son's great-granddaughter through a son	Excluded
Son's great-great-grandson through a son	Residue

Brothers and Sisters

Case 1

Heir	Share
Mother	1/6
Uterine brother	1/6
Full brother	Residue
Full sister	Residue

Case 2

Heir	Share
Daughter	1/2
Full sister	Residue
Paternal half-sister	Excluded by the full sister
Full paternal uncle	Excluded

Case 3

Heir	Share
Full sister	1/2
Three paternal half-sisters	1/6 collectively
Full brother's son	Residue
Paternal half-brother's son	Excluded

Case 4

Heir	Share
Two full sisters	2/3 collectively
Paternal half-sister	Excluded by the two full sisters
Full brother's son	Residue

Case 5

Heir	Share
Two full sisters	2/3 collectively
Paternal half-sister	1/6
Paternal half-brother	Residue
Full brother's son	Excluded

Case 6

Heir	Share
Two full sisters	2/3 collectively
Paternal half-sister	Excluded
Paternal half-brother's son	Residue

Case 7

Heir	Share
Daughter	1/2
Full sister	Residue
Paternal half-brother	Excluded by the full sister

Case 8

Heir	Share
Son's daughter	1/2
Paternal half-sister	Residue
Full brother's son	Excluded by the paternal half-sister

Inheritance of Ascendants

Case 1

Heir	Share
Son's daughter	1/2
Mother	1/6
Father	Residue

Case 2

Heir	Share
Mother	1/6
Two uterine brothers	1/3 collectively
Full brother	Residue

Case 3

Heir	Share
Mother	1/3
Uterine brother	1/6
Wife	1/4
Full paternal cousin	Residue

Case 4

Heir	Share
Wife	1/8
Father	1/6
Son	Residue

Case 5

Heir	Share
Wife	1/8
Father	1/6, plus the residue
Daughter	1/2

Impediments to Inheritance

Case 1

Heir	Share
Wife	1/8
Mother	1/6
Murderous son	Excluded
Son's son	Residue

Case 2

Heir	Share
Wife	Excluded due to mutual imprecation (liʿān)
Mother	1/6
Son born to the parties involved in liʿān	Excluded
Full brother	Residue

Case 3

Heir	Share
Christian wife	Excluded due to difference of religion
Mother	1/6
Murderous son	Excluded
Son's son	Residue

Case 4

Heir	Share
Wife divorced by an irrevocable divorce	Excluded
Mother	1/3
Son born of adultery by the deceased	Excluded
Full brother	Residue