PART 1: Normal form

Normal Form and Transformations

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Normal Form and Transformations

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Put the following groups of notes into normal form. The first is completed for you as an example.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. |  [8, 11, 1, 3] | b. |  | c. |  | d. |  |



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| e. |  | f. |  | g. |  |

PART 2: Calculating transformations

You are given several sets in normal order. Perform the requested operation, then write the new set in normal order. *Note that when you invert a set, you may have to recalculate its normal form.* The first is completed for you as an example.

|  | Original | Transformation | New set in normal order |
| --- | --- | --- | --- |
| a. | [5, 9, 11, 0] |  $\overset{I\_{0}}{⟷}$ |  [0, 1, 3, 7] |
| b. | [7, 9, 0, 1, 2] | $$\overset{T\_{5}}{⟶}$$ |  |
| c. | [0, 3, 4, 8] | $$\overset{T\_{11}}{⟶}$$ |  |
| d. | [2, 6, 9] | $$\overset{T\_{9}}{⟶}$$ |  |
| e. | [2, 5, 8, 9] | $$\overset{I\_{9}}{⟷}$$ |  |
| f. | [9, 10, 1, 3, 4, 6] | $$\overset{I\_{2}}{⟷}$$ |  |
| g. | [6, 9, 10, 11] | $$\overset{I\_{6}}{⟷}$$ |  |

PART 3: Identifying transformations in normal form

The following pairs of sets may or may not be related by either transposition (T*n* ) or inversion (I*n* ). If the two are related by T*n* or I*n*, indicate the transformation type and index number; if they are not related, write “none.” The first is completed for you as an example.

|  | Set 1 | Set 2 | Relationship |
| --- | --- | --- | --- |
| a. | [5, 9, 11, 0] | [1, 2, 4, 8] |  $I\_{1}$ |
| b. | [7, 9, 0, 1, 2] | [2, 3, 4, 7, 9] |  |
| c. | [0, 3, 4, 8] | [10, 1, 2, 6] |  |
| d. | [2, 6, 9] | [5, 8, 0] |  |
| e. | [2, 5, 8, 9] | [7, 10, 1, 2] |  |
| f. | [9, 10, 1, 3, 4, 6] | [4, 5, 7, 10, 11, 0] |  |
| g. | [6, 9, 10, 11] | [6, 7, 8, 11] |  |

PART 4: Identifying transformations in a score

On the following page, you are given the final page of “Nacht” from *Pierrot Lunaire* by Arnold Schoenberg.

* In measure 20, all the trichords formed by the eighth-note triplets in the piano can be related by transposition or inversion.
	+ Calculate the T*n* and I*n* relationships between adjacent trichords (horizontally) as well as trichords that occur simultaneously (vertically). *Hint: it may help to put sets in normal order first.*
	+ Draw arrows connecting the trichords and label each arrow with the T*n* or I*n* relationship. One has been completed for you.
* In any instrument, find four other trichords that are related by T*n* to the trichords in m. 20. As before, draw arrows connecting each pair and label it with the T*n*relationship.

**I11**