

TCPS2

TRI-COUNCIL POLICY STATEMENT

Ethics Code for Research Involving Humans

2010

Canadian Institutes of Health Research,
Natural Sciences and Engineering Research Council of Canada,
Social Sciences and Humanities Research Council of Canada

Prepared by the Tri-Council Working Group

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Not for publication without the approval of the Tri-Council Working Group.
TCPS at www.pre.ethics.gc.ca.

Revised by the Tri-Council Working Group

Revised March 2010 (Replaces the TCPS (2009))



C

.....	1
.....	5
.....	5
.....	5
.....	7
.....	7
.....	8
.....	11
.....	15
.....	15

.....	67
.....	67
A. E E B	67
B. u E B w	76
C. A	83
D. E w u u D E	85
.....	89
.....	89
A. C	89
B. u C	91
C. E B C	93
D. C	94
.....	97
.....	97
A. w E B /	97
B. w C u u	101
.....	105
.....	105
A. C D	107
B. E F w A C	109
C. A A C	110
.....	135
.....	135
A. u u	135
B. E w u	138
.....	147
.....	147
A. C	148
B. C D	149

C. A	157
D. F	163
E. A	164
	169



... () ... ()

... ..

... () ... ()

... ..

()

... ..

()

... ..

... ..



C 1

1 2 3 4

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

... f ... s ... f ... f ... f ...



Handwritten musical notation on a five-line staff. The notation includes various rhythmic values such as eighth and sixteenth notes, rests, and dynamic markings like 'f' (forte) and 'ff' (fortissimo). There are also some markings that look like 'S' or 'S.' and some parentheses. The handwriting is somewhat dense and appears to be a working draft or a specific style of notation.

Handwritten musical notation on a five-line staff, continuing from the previous block. It features similar rhythmic patterns and dynamic markings. The notation is more spread out across the staff lines, with some notes extending to the top and bottom lines. There are also some markings that look like 'S' and 'ff'.

Handwritten musical notation on a five-line staff, continuing from the previous block. The notation includes various rhythmic values and dynamic markings. There are some markings that look like 'S' and 'ff'. The notation is dense and appears to be a working draft or a specific style of notation.

Handwritten musical notation on a staff, including notes, rests, and dynamic markings like 'f'.

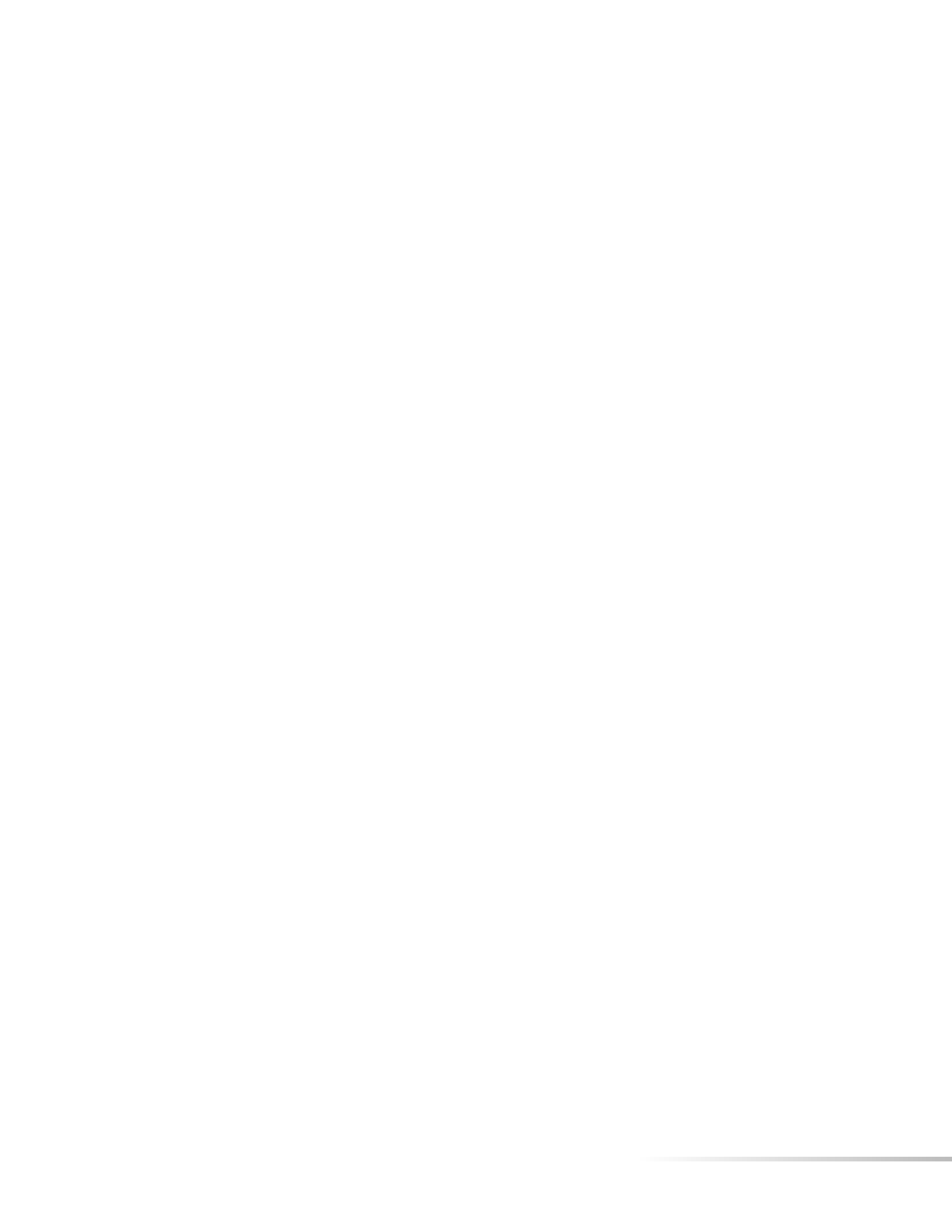
Handwritten musical notation on a staff, including notes, rests, and dynamic markings like 'ff' and 'f'.

Handwritten musical notation on a staff, including notes, rests, and dynamic markings like 'ff' and 'f'.

Handwritten musical notation on a staff, including notes, rests, and dynamic markings like 'f'.

Handwritten musical notation on a staff, including notes, rests, and dynamic markings like 'f'.

Handwritten musical notation on a staff, including notes, rests, and dynamic markings like 'f'.



C 3

• • • • •

1/7 1/7

The musical score consists of ten staves. The notation includes various rhythmic values such as eighth and sixteenth notes, rests, and dynamic markings like 'f' (forte) and 'p' (piano). There are also some unusual symbols, possibly indicating articulation or performance instructions. The music is written in a standard staff format with a treble clef and a key signature of one flat (B-flat). The piece appears to be in a common time signature, possibly 4/4 or 3/4. The notation is dense and complex, suggesting a more advanced level of composition or performance.

A. General Principles

1. $\frac{1}{f} = \frac{1}{v} + \frac{1}{v'}$

(1) $\frac{1}{f} = \frac{1}{v} + \frac{1}{v'}$

(2) $\frac{1}{f} = \frac{1}{v} + \frac{1}{v'}$

(3) $\frac{1}{f} = \frac{1}{v} + \frac{1}{v'}$

2. $\frac{h}{\lambda} = mv$

(1) $\frac{h}{\lambda} = mv$

(2) $\frac{h}{\lambda} = mv$

3. $E = hf$

(1) $E = hf$

(2) $E = hf$

(3) $E = hf$

(4) $E = hf$

(5) $E = hf$

(6) $E = hf$

(7) $E = hf$



... () ...

... () ...

... () ...

... () ...

... () ...

... ii ...

... () ...

... () ...

ff
f
f
f

f
f
f

f

f

f
f (f) f

Handwritten musical notation on a five-line staff, featuring various note values and rests.

Handwritten musical notation on a five-line staff, including dynamic markings such as *f* and *ff*.

Handwritten musical notation on a five-line staff, showing rhythmic patterns and note placement.

Handwritten musical notation on a five-line staff, concluding with a double bar line and dynamic markings like *ff*.





C 4

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1 2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1

Handwritten title and staff information

First system of musical notation with notes and rests

Second system of musical notation with notes and rests

Third system of musical notation with notes and rests

Fourth system of musical notation with notes and rests

Fifth system of musical notation with notes and rests

Sixth system of musical notation with notes and rests

Handwritten title and staff information

Seventh system of musical notation with notes and rests

Eighth system of musical notation with notes and rests

Handwritten title or header text at the top of the page.

Handwritten text line 1, starting with a small symbol on the left.

Handwritten text line 2, containing several small symbols and characters.

Handwritten text line 3, continuing the sequence of symbols.

Handwritten text line 4, ending with a small symbol on the right.

QUESTION 1

1/2/17

1. The following table shows the number of people who attended a concert in each of the five years from 2012 to 2016. The number of people who attended the concert in each year is given by the number of dots in the corresponding row.

2/2/17

2. The following table shows the number of people who attended a concert in each of the five years from 2012 to 2016. The number of people who attended the concert in each year is given by the number of dots in the corresponding row.



C 5

• • • • •

1 2

1

... () ...

177

... f ...

() ...

() ...

178

... f ...

... f ...

... f ...

... f ...

... f ...

... f ...

... f ...

... f ...

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() ()



1

2

3

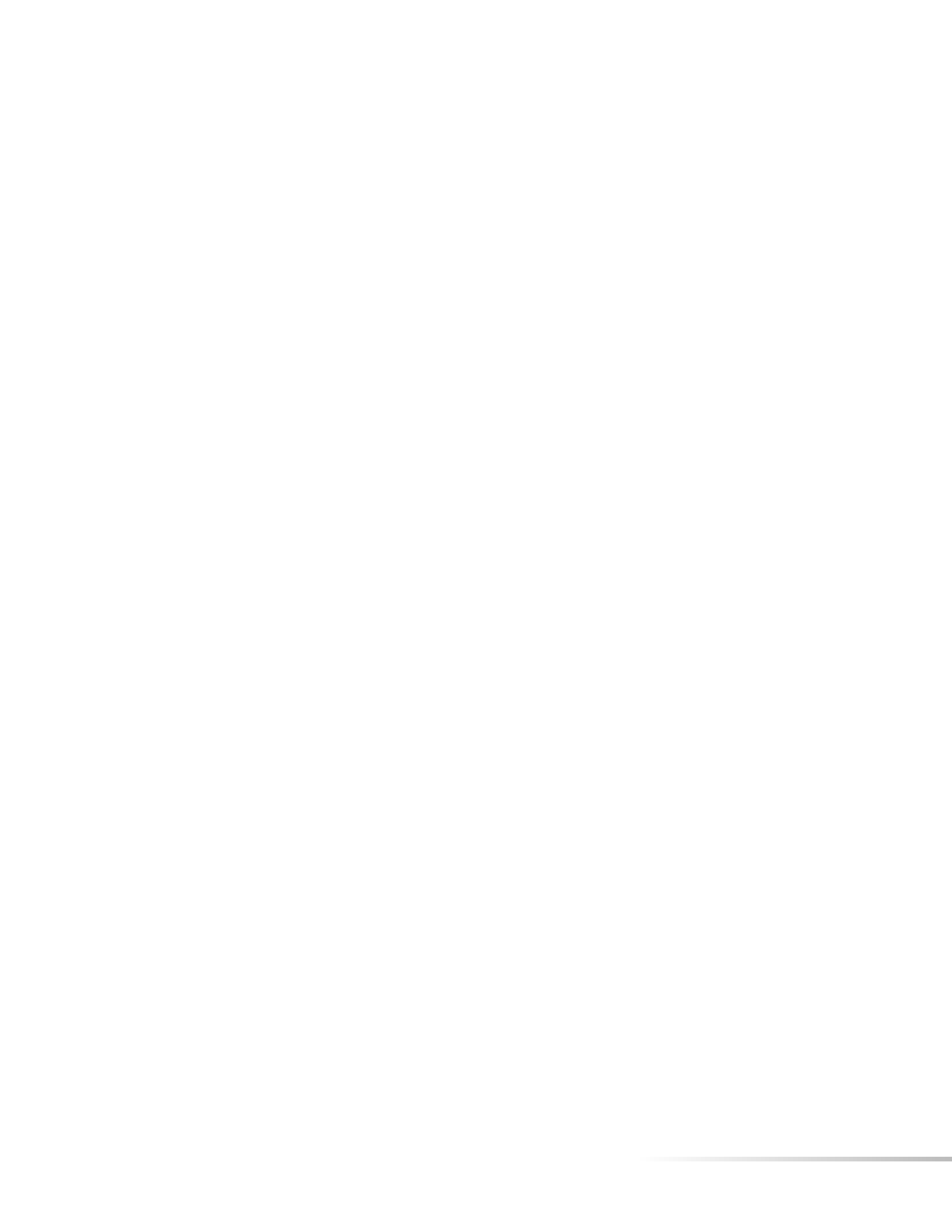
4

5

6

7

8



C 6



Introduction

Introduction

... () ...

... () ...

... () ...

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... () ...

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... () ...

... () ...

This image shows a page of musical notation, likely a score for a piano or similar instrument. The notation is arranged in several systems, each consisting of multiple staves. The notes are primarily eighth and sixteenth notes, often beamed together. There are several dynamic markings, including 'f' (forte) and 'ff' (fortissimo), indicating changes in volume. The notation includes stems, beams, and various rests. The overall appearance is that of a standard musical score page.

Handwritten musical notation on a five-line staff, featuring various rhythmic values and dynamic markings.

f

Handwritten musical notation on a five-line staff, starting with a dynamic marking of *f*.

f

Handwritten musical notation on a five-line staff, starting with a dynamic marking of *f*.

Handwritten musical notation on a five-line staff, featuring dynamic markings of *f* and *ff*.

Handwritten musical notation on a five-line staff, featuring dynamic markings of *f* and *ff*.

f

Handwritten musical notation on a five-line staff, starting with a dynamic marking of *f*.

f

Handwritten musical notation on a five-line staff, starting with a dynamic marking of *f*.

f

Handwritten musical notation on a five-line staff, starting with a dynamic marking of *f* and including a *ff* marking.

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()

1/2

1/2

()

1/2

()

()

1/2

1/2

()

2012.1

This image shows a page of musical notation, likely a score for a piano or similar instrument. The notation is arranged in several systems, each consisting of multiple staves. The notes are primarily eighth and sixteenth notes, often beamed together. There are several dynamic markings, including 'f' (forte) and 'ff' (fortissimo), indicating changes in volume. Some measures contain rests. The notation is dense and appears to be a complex piece of music. The page is numbered '2012.1' in the top left corner.

Handwritten musical notation on a five-line staff. It begins with a treble clef and a key signature of one flat (B-flat). The notation consists of several measures of music, featuring quarter and eighth notes, rests, and dynamic markings such as *f* (forte) and *ff* (fortissimo).

Handwritten musical notation on a five-line staff, continuing the piece. It includes various rhythmic values and dynamic markings like *f* and *ff*.

Handwritten musical notation on a five-line staff. This section includes a measure with a circled parenthesis $()$ below the staff, possibly indicating a specific performance instruction or a section marker. Dynamic markings *f* and *ff* are present.

Handwritten musical notation on a five-line staff, showing further development of the musical theme with various note values and dynamics.

Handwritten musical notation on a five-line staff, continuing the composition with standard musical notation and dynamic markings.

Handwritten musical notation on a five-line staff, concluding the visible portion of the manuscript with various rhythmic patterns and dynamics.

Handwritten musical notation on a staff, including notes, rests, and dynamic markings such as *f*.

Handwritten musical notation on a staff, including notes, rests, and dynamic markings such as *f*.

Handwritten musical notation on a staff, including notes, rests, and dynamic markings such as *f*.

Handwritten musical notation on a staff, including notes, rests, and dynamic markings such as *f*. Includes a closing parenthesis *)*.

Handwritten musical notation on a staff, including notes, rests, and dynamic markings such as *f*.

Handwritten musical notation on a staff, including notes, rests, and dynamic markings such as *f*.

Handwritten musical notation on a staff, including notes, rests, and dynamic markings such as *f*.

A handwritten musical score consisting of ten staves. The notation includes various rhythmic values, stems, and beams. Dynamics are indicated by 'ff' (fortissimo) and 'f' (forte). Articulation marks such as accents and slurs are present throughout. The score is written in a cursive, handwritten style.

Staff 1: ff

Staff 2: f

Staff 3: f

Staff 4: f

Staff 5: f

Staff 6: f

Staff 7: f

Staff 8: f

Staff 9: f

Staff 10: ff

... () ...
...) ... f (...
...), ... f ...
... (...), ... (... f) ...
... § ...

... § ... f ... § ...
... f f ... § ...
... § ... (... , ...
...) ... f ...
... § ...

... § ... f ... ff ... f ...

C 7



1. 1

Musical score for the first section, consisting of 12 staves of music. The notation includes various notes, rests, and dynamic markings such as f , ff , and mf . There are also some parentheses and other symbols interspersed within the score.

2. 1

Musical score for the second section, consisting of 3 staves of music. The notation includes various notes, rests, and dynamic markings such as f and mf .

Handwritten musical notation on a staff, featuring various notes, rests, and dynamic markings such as f , ff , and f .

Handwritten musical notation on a staff, including notes, rests, and dynamic markings such as f , ff , and f .

Handwritten musical notation on a staff, including notes, rests, and dynamic markings such as f , ff , and f .

Handwritten musical notation on a staff, including notes, rests, and dynamic markings such as f , ff , and f .

Handwritten musical notation on a staff, including notes, rests, and dynamic markings such as f , ff , and f .

Handwritten musical notation on a five-line staff. The notation includes various rhythmic values (quarter, eighth, and sixteenth notes), rests, and dynamic markings such as *f* (forte) and *ff* (fortissimo). The music is written in a cursive, handwritten style.

f

Handwritten musical notation on a five-line staff, continuing from the previous section. It features dynamic markings including *f* and *ff*, and various rhythmic patterns.

Application

Handwritten musical notation on a five-line staff, labeled as an application. It includes dynamic markings like *f* and *ff*, and rhythmic notation.

Handwritten musical notation on a five-line staff, continuing the application section. It features dynamic markings such as *f* and *ff*, and rhythmic notation.

Handwritten musical notation on a five-line staff. The notation includes various rhythmic values such as eighth and sixteenth notes, rests, and bar lines. The ink is dark and the handwriting is somewhat dense.

Handwritten musical notation on a five-line staff, continuing from the previous section. It features similar rhythmic patterns and note values, with some larger notes and rests interspersed.

Handwritten musical notation on a five-line staff, appearing as a separate line of music.

Handwritten musical notation on a five-line staff, including a measure with a circled note and a measure with a circled rest. The notation is sparse and appears to be a specific musical phrase or exercise.

Musical score with multiple staves and dynamic markings (f, ff, s).

Musical score with multiple staves and dynamic markings (f, ff, s).

1/4 ()

Musical score with multiple staves and dynamic markings (f, ff, s).

Handwritten musical notation on a five-line staff, featuring various rhythmic values and accidentals.

Handwritten musical notation on a five-line staff, including a double bar line and various notes.

Handwritten text or annotation on the left margin.

Handwritten musical notation on a five-line staff, starting with a circled letter 'C'.

Handwritten musical notation on a five-line staff, starting with a circled letter 'C'.

Handwritten musical notation on a five-line staff, including a double bar line and various notes.

Handwritten musical notation on a five-line staff, including a double bar line and various notes.

Handwritten text or annotation on the left margin.

Handwritten musical notation on a five-line staff, including a circled letter 'C' and a circled letter 'H'.

Handwritten musical notation on a five-line staff, including a circled letter 'C' and a circled letter 'H'.

A page of musical notation consisting of ten staves. The notation includes various notes, rests, and dynamic markings such as 'f' and 'ff'. The music is arranged in a system with ten staves. The notation is dense and includes many accidentals and dynamic markings.

C 9



Introduction

A large block of musical notation, including staves with notes, rests, and dynamic markings like 'f' and 'ff'. The notation is dense and covers most of the page. It includes various note values, rests, and dynamic markings such as 'f' and 'ff'. The notation is arranged in several staves, with some notes beamed together. The overall appearance is that of a complex musical score.

... ..
... ..
... ..
... ..
... ..

... ..
... ..
... ..
... ..

Respect for Persons,

... ..
... ..
... ..

() f
f
f
() f
) f

f
f f f
f
()

f f f f f
ff f f f
f f f f f
() f

() f
f f f f f
f f f f f
f f f f f

f
f
f

f f f f f
f f f f f
f f f f f

f f f f f f f f
ff ff f f f f f f
f f f f f f f f

f f f f f f f f
f f f f f f f f
f f f f f f f f
() f f f f f f f

(), f
f
() f

f
ff

f

... () ...

1. 1/2

... () ...

2. 1/2

... () ...

... () ...

... () ...

... () ...

... () ...

... () ...

... () ...

... () ...

... () ...

... () ...

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... () ...

... () ...

... () ...

Handwritten musical notation on a five-line staff. The notation includes various rhythmic values such as eighth and sixteenth notes, rests, and dynamic markings like 'f' (forte). There are also some symbols that look like 'S' or 'G' interspersed with the notes.

f
f

Handwritten musical notation on a five-line staff, continuing from the previous section. It features similar rhythmic patterns and dynamic markings.

f

Handwritten musical notation on a five-line staff, the final section on the page. It includes a variety of note values, rests, and dynamic markings, ending with a double bar line.

ff
f

ff
f

ff
f

f

f

f

2012

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

2. In the second section, we explore the various methods used to collect and analyze data. It is crucial to choose the right tools and techniques based on the specific requirements of the project. Regular updates and monitoring are essential to keep the data current and relevant.

3. The third part of the document focuses on the challenges faced during the data collection process. Common issues include incomplete data, inconsistent formatting, and potential errors in data entry. Implementing strict quality control measures can help mitigate these risks and ensure the integrity of the information.

4. Finally, the document concludes by highlighting the benefits of a well-organized and accurate data system. It enables better decision-making, improves operational efficiency, and provides a solid foundation for future growth and expansion.

Handwritten musical notation on a five-line staff, featuring various note heads, stems, and beams.

rit. f

Handwritten musical notation on a five-line staff, including dynamic markings such as f and ff .

f

Handwritten musical notation on a five-line staff, featuring dynamic markings like f , ff , and a sharp sign ($\#$).

f

Handwritten musical notation on a five-line staff, including a circled note and dynamic markings like f .

Handwritten musical notation on a five-line staff. The notation includes various rhythmic values (quarter, eighth, and sixteenth notes) and rests. There are two instances of a circled note, possibly indicating a specific exercise or a correction. The staff is filled with a sequence of notes and rests, with some notes beamed together.

Handwritten musical notation on a five-line staff. This section continues the sequence of notes and rests from the previous staff. It features a mix of rhythmic patterns and includes a few notes with stems pointing downwards. The handwriting is consistent with the first section.

Handwritten musical notation on a five-line staff. This section shows further progression of the musical exercise. It includes several notes with stems pointing downwards and some notes with stems pointing upwards. The notation is dense and covers most of the staff.

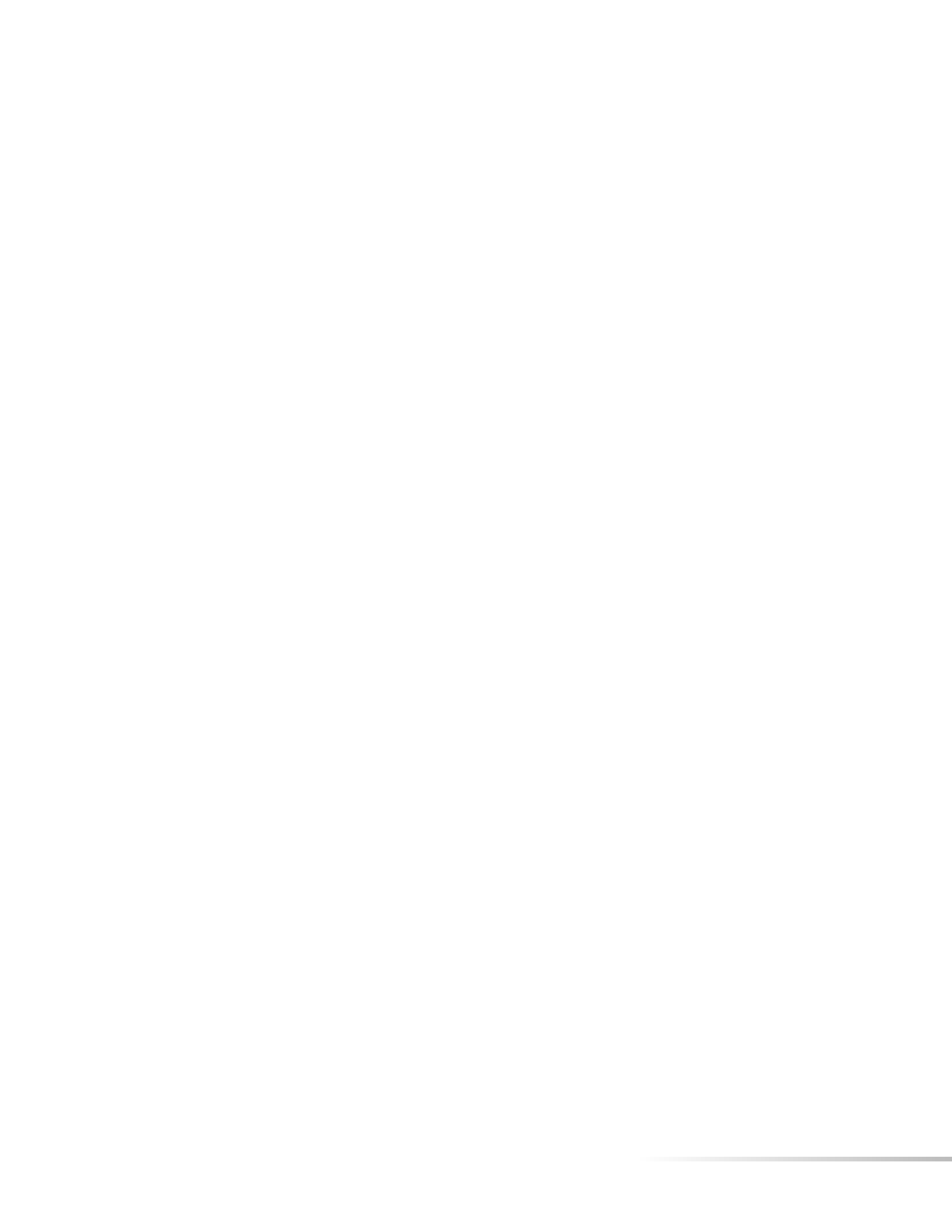


(-) **Inductive Understanding:**

() **Diversity of Approaches:**

() **Dynamic, Reflective and Continuous Research Process:**

() **Diverse, Multiple and Often Evolving Contexts:**





Handwritten musical notation, possibly a clef or key signature.

Handwritten musical notation, possibly a time signature or tempo marking.

Handwritten musical score consisting of multiple staves. The notation includes various notes, rests, and dynamic markings such as *f* (forte) and *ff* (fortissimo). There are also some parentheses and other symbols interspersed within the staves.

Handwritten musical notation, possibly a clef or key signature.

Handwritten musical score consisting of multiple staves. The notation includes various notes, rests, and dynamic markings such as *f* (forte) and *ff* (fortissimo). There are also some parentheses and other symbols interspersed within the staves.

Handwritten musical notation, possibly a clef or key signature.

Handwritten musical score consisting of multiple staves. The notation includes various notes, rests, and dynamic markings such as *f* (forte) and *ff* (fortissimo). There are also some parentheses and other symbols interspersed within the staves.

... (f) ...
... f ...
... f f ...

... (f) ...
... (f) ...
... f ...

... f ...
... f (...) ...
... f f ...
... (f) ...

ff ... ff ... f ... f ...
... (...)

... f ... f ... f ... f ...

1. The first part of the text discusses the importance of maintaining accurate records of all transactions and activities related to the business. It emphasizes the need for transparency and accountability, particularly in the context of tax reporting and financial audits. The author notes that proper record-keeping is essential for identifying potential areas of risk and ensuring compliance with applicable laws and regulations.

A handwritten musical score consisting of ten staves. The notation includes various musical symbols such as notes, rests, and dynamic markings. The first staff begins with a treble clef and a common time signature. The score features several dynamic markings, including *f* (forte), *ff* (fortissimo), and *f* (fz) (forzando). There are also some markings that appear to be *f* with a circled *f* inside. The notation is dense and spans across the staves, with some notes beamed together. The handwriting is in black ink on white paper.

1. **Introduction** (10%)
2. **Background** (20%)
3. **Methodology** (30%)
4. **Results** (30%)
5. **Conclusion** (10%)

C

12





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col. 2

Main body of musical notation with various notes and rests.



Continuation of musical notation.

Continuation of musical notation.

Continuation of musical notation.



Handwritten musical notation on a five-line staff. The notation includes various rhythmic values such as eighth and sixteenth notes, rests, and bar lines. The handwriting is somewhat dense and appears to be a student's attempt at a musical composition or transcription.

Handwritten musical notation on a five-line staff, continuing the piece. It features similar rhythmic patterns and note values as the previous section.

Handwritten musical notation on a five-line staff, starting with a circled measure number (1). The notation includes notes and rests.

Handwritten musical notation on a five-line staff, starting with a circled measure number (2). It continues the musical sequence.

Handwritten musical notation on a five-line staff, starting with a circled measure number (3). The notation includes notes and rests.

Handwritten musical notation on a five-line staff, starting with a circled measure number (4). It continues the musical sequence.

Handwritten musical notation on a five-line staff, starting with a circled measure number (5). The notation includes notes and rests.

()

ff



$f(x) = \begin{cases} x^2 + 1 & x < 0 \\ x^2 - 1 & x \geq 0 \end{cases}$

(1) 求 $f(x)$ 的表达式.

(2) 求 $f(x)$ 的图像.

(3) 求 $f(x)$ 的导数.

(4) 求 $f(x)$ 的极值.

(5) 求 $f(x)$ 的单调性.

(6) 求 $f(x)$ 的凹凸性.

(7) 求 $f(x)$ 的渐近线.

(8) 求 $f(x)$ 的零点.

(9) 求 $f(x)$ 的定积分.

(10) 求 $f(x)$ 的泰勒展开.





... () ...

... f ...

i - - - - - *f* - - - - -
- - - - - *f* - - - - -
- - - - - *f* - - - - -

f - - - - - *f* - - - - -
f - - - - - *f* - - - - -
f - - - - - *f* - - - - -

Fetus - - - - - *f* - - - - - *f* - - - - -
f - - - - - *f* - - - - - *f* - - - - -
- - - - -

f - - - - - *f* - - - - -
f - - - - - *f* - - - - -
f - - - - - *f* - - - - -

f - - - - - *f* - - - - -

f - - - - - *f* - - - - -
f - - - - - *f* - - - - -
f - - - - - *f* - - - - -

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f - - - - - *f* - - - - -
f - - - - - *f* - - - - -

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f - - - - - *f* - - - - -
f - - - - - *f* - - - - -

f - - - - - *f* - - - - - (*f*)
f - - - - - *f* - - - - -
f - - - - - *f* - - - - -

f - - - - - *f* - - - - -
f - - - - - *f* - - - - -
f - - - - - *f* - - - - -

f - - - - - *f* - - - - -
f - - - - - *f* - - - - -
f - - - - - *f* - - - - -

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f - - - - - *f* - - - - -

f - - - - - *f* - - - - -
f - - - - - *f* - - - - -
f - - - - - *f* - - - - -

Handwritten musical score on ten staves. The notation includes various rhythmic values (quarter, eighth, sixteenth notes), rests, and dynamic markings such as *f*, *ff*, and *fz*. The score is written in a cursive style with some corrections and annotations.

1) $f(x) = x^2 - 2x + 1$
 $f'(x) = 2x - 2$
 $f''(x) = 2$
Stationary point at $x = 1$
 $f(1) = 0$
Since $f''(1) = 2 > 0$, it is a local minimum.
The function is a parabola opening upwards with vertex at $(1, 0)$.

2) $f(x) = x^3 - 3x^2 + 2x$
 $f'(x) = 3x^2 - 6x + 2$
 $f''(x) = 6x - 6$
Stationary points at $x = \frac{1}{3}$ and $x = \frac{5}{3}$
 $f(\frac{1}{3}) = \frac{2}{27}$
 $f(\frac{5}{3}) = -\frac{10}{27}$
Since $f''(\frac{1}{3}) = 2 > 0$, it is a local minimum.
Since $f''(\frac{5}{3}) = 4 < 0$, it is a local maximum.

3) $f(x) = x^4 - 4x^3 + 6x^2 - 4x + 1$
 $f'(x) = 4x^3 - 12x^2 + 12x - 4$
 $f''(x) = 12x^2 - 24x + 12$
Stationary points at $x = 1$ and $x = 3$
 $f(1) = 0$
 $f(3) = 0$
Since $f''(1) = 0$ and $f''(3) = 0$, we need to check higher order derivatives.
 $f'''(x) = 24x - 24$
 $f'''(1) = 0$, $f'''(3) = 48$
Since $f'''(3) > 0$, it is a local minimum.

4) $f(x) = x^5 - 5x^4 + 10x^3 - 10x^2 + 5x - 1$
 $f'(x) = 5x^4 - 20x^3 + 30x^2 - 20x + 5$
 $f''(x) = 20x^3 - 60x^2 + 60x - 20$
Stationary points at $x = 1$ and $x = 3$
 $f(1) = 0$
 $f(3) = 0$
Since $f''(1) = 0$ and $f''(3) = 0$, we need to check higher order derivatives.
 $f'''(x) = 60x^2 - 120x + 60$
 $f'''(1) = 0$, $f'''(3) = 60$
Since $f'''(3) > 0$, it is a local minimum.

5) $f(x) = x^6 - 6x^5 + 15x^4 - 20x^3 + 15x^2 - 6x + 1$
 $f'(x) = 6x^5 - 30x^4 + 60x^3 - 60x^2 + 30x - 6$
 $f''(x) = 30x^4 - 120x^3 + 180x^2 - 120x + 30$
Stationary points at $x = 1$ and $x = 3$
 $f(1) = 0$
 $f(3) = 0$
Since $f''(1) = 0$ and $f''(3) = 0$, we need to check higher order derivatives.
 $f'''(x) = 120x^3 - 360x^2 + 360x - 120$
 $f'''(1) = 0$, $f'''(3) = 120$
Since $f'''(3) > 0$, it is a local minimum.

6) $f(x) = x^7 - 7x^6 + 21x^5 - 35x^4 + 35x^3 - 21x^2 + 7x - 1$
 $f'(x) = 7x^6 - 42x^5 + 105x^4 - 140x^3 + 105x^2 - 42x + 7$
 $f''(x) = 42x^5 - 210x^4 + 420x^3 - 420x^2 + 210x - 42$
Stationary points at $x = 1$ and $x = 3$
 $f(1) = 0$
 $f(3) = 0$
Since $f''(1) = 0$ and $f''(3) = 0$, we need to check higher order derivatives.
 $f'''(x) = 210x^4 - 840x^3 + 1260x^2 - 840x + 210$
 $f'''(1) = 0$, $f'''(3) = 210$
Since $f'''(3) > 0$, it is a local minimum.

7) $f(x) = x^8 - 8x^7 + 28x^6 - 56x^5 + 56x^4 - 28x^3 + 8x^2 - 1$
 $f'(x) = 8x^7 - 56x^6 + 168x^5 - 280x^4 + 224x^3 - 84x^2 + 16x$
 $f''(x) = 56x^6 - 336x^5 + 840x^4 - 1120x^3 + 672x^2 - 168x + 16$
Stationary points at $x = 1$ and $x = 3$
 $f(1) = 0$
 $f(3) = 0$
Since $f''(1) = 0$ and $f''(3) = 0$, we need to check higher order derivatives.
 $f'''(x) = 336x^5 - 1680x^4 + 3360x^3 - 3360x^2 + 1344x - 168$
 $f'''(1) = 0$, $f'''(3) = 336$
Since $f'''(3) > 0$, it is a local minimum.

8) $f(x) = x^9 - 9x^8 + 36x^7 - 84x^6 + 126x^5 - 126x^4 + 84x^3 - 36x^2 + 9x - 1$
 $f'(x) = 9x^8 - 72x^7 + 252x^6 - 504x^5 + 630x^4 - 504x^3 + 252x^2 - 72x + 9$
 $f''(x) = 72x^7 - 504x^6 + 1512x^5 - 2520x^4 + 2520x^3 - 1512x^2 + 504x - 72$
Stationary points at $x = 1$ and $x = 3$
 $f(1) = 0$
 $f(3) = 0$
Since $f''(1) = 0$ and $f''(3) = 0$, we need to check higher order derivatives.
 $f'''(x) = 504x^6 - 3024x^5 + 7560x^4 - 10080x^3 + 7560x^2 - 3024x + 504$
 $f'''(1) = 0$, $f'''(3) = 504$
Since $f'''(3) > 0$, it is a local minimum.

9) $f(x) = x^{10} - 10x^9 + 45x^8 - 120x^7 + 210x^6 - 252x^5 + 210x^4 - 120x^3 + 45x^2 - 10x + 1$
 $f'(x) = 10x^9 - 90x^8 + 360x^7 - 840x^6 + 1260x^5 - 1260x^4 + 840x^3 - 252x^2 + 45x - 10$
 $f''(x) = 90x^8 - 720x^7 + 2520x^6 - 5040x^5 + 6300x^4 - 5040x^3 + 2520x^2 - 504x + 45$
Stationary points at $x = 1$ and $x = 3$
 $f(1) = 0$
 $f(3) = 0$
Since $f''(1) = 0$ and $f''(3) = 0$, we need to check higher order derivatives.
 $f'''(x) = 720x^7 - 5040x^6 + 15120x^5 - 25200x^4 + 25200x^3 - 15120x^2 + 5040x - 720$
 $f'''(1) = 0$, $f'''(3) = 720$
Since $f'''(3) > 0$, it is a local minimum.

10) $f(x) = x^{11} - 11x^{10} + 55x^9 - 165x^8 + 330x^7 - 462x^6 + 462x^5 - 330x^4 + 165x^3 - 55x^2 + 11x - 1$
 $f'(x) = 11x^{10} - 110x^9 + 495x^8 - 1320x^7 + 2310x^6 - 2772x^5 + 2310x^4 - 1320x^3 + 495x^2 - 110x + 11$
 $f''(x) = 110x^9 - 990x^8 + 3960x^7 - 9240x^6 + 13860x^5 - 13860x^4 + 9240x^3 - 3960x^2 + 990x - 110$
Stationary points at $x = 1$ and $x = 3$
 $f(1) = 0$
 $f(3) = 0$
Since $f''(1) = 0$ and $f''(3) = 0$, we need to check higher order derivatives.
 $f'''(x) = 990x^8 - 7920x^7 + 27720x^6 - 55440x^5 + 69300x^4 - 55440x^3 + 27720x^2 - 7920x + 990$
 $f'''(1) = 0$, $f'''(3) = 990$
Since $f'''(3) > 0$, it is a local minimum.

11) $f(x) = x^{12} - 12x^{11} + 66x^{10} - 220x^9 + 495x^8 - 792x^7 + 792x^6 - 495x^5 + 220x^4 - 66x^3 + 12x^2 - 12x + 1$
 $f'(x) = 12x^{11} - 132x^{10} + 660x^9 - 1980x^8 + 3960x^7 - 5544x^6 + 4752x^5 - 2475x^4 + 1320x^3 - 396x^2 + 24x - 12$
 $f''(x) = 132x^{10} - 1320x^9 + 6930x^8 - 15840x^7 + 27720x^6 - 33264x^5 + 23760x^4 - 9900x^3 + 2592x^2 - 396x + 24$
Stationary points at $x = 1$ and $x = 3$
 $f(1) = 0$
 $f(3) = 0$
Since $f''(1) = 0$ and $f''(3) = 0$, we need to check higher order derivatives.
 $f'''(x) = 1320x^9 - 11880x^8 + 55440x^7 - 110880x^6 + 163800x^5 - 163800x^4 + 95040x^3 - 29700x^2 + 5004x - 396$
 $f'''(1) = 0$, $f'''(3) = 1320$
Since $f'''(3) > 0$, it is a local minimum.

1. $\int_0^1 x^2 dx = \frac{1}{3}$

2. $\int_0^1 x^3 dx = \frac{1}{4}$

3. $\int_0^1 x^4 dx = \frac{1}{5}$

4. $\int_0^1 x^5 dx = \frac{1}{6}$

5. $\int_0^1 x^6 dx = \frac{1}{7}$

6. $\int_0^1 x^7 dx = \frac{1}{8}$

7. $\int_0^1 x^8 dx = \frac{1}{9}$

8. $\int_0^1 x^9 dx = \frac{1}{10}$

9. $\int_0^1 x^{10} dx = \frac{1}{11}$

10. $\int_0^1 x^{11} dx = \frac{1}{12}$

11. $\int_0^1 x^{12} dx = \frac{1}{13}$

Handwritten musical score consisting of six systems of staves. The notation includes notes, rests, and dynamic markings such as *f*, *ff*, and *f*. The score is written in a cursive style on aged paper.

