

The name of the exam 14 luglio 2023	Prof.	Firma leggibile dello studente
Cognome:	Nome:	Matricola:

INSTRUCTIONS

- Write here your instructions
- two
- three

Part One

SOME EXERCISES FROM 2 FILES

1. (2 punti) exercise 3a $a = 4, b = 3, c = 7$

- (a) answer 3 wrong
- (b) answer 4 wrong
- ▶ (c) answer 1 correct
- (d) answer 5 wrong
- (e) answer 2 wrong

Soluzione: answer 1

2. (1 punto) exercise 2b $a = 3, b = 4, c = 8$

- (a) answer 4 wrong
- ▶ (b) answer 1 correct
- (c) answer 2 wrong
- (d) answer 3 wrong
- (e) answer 5 wrong

3. (1 punto) exercise 2c $a = 4, b = 5, c = 7$

- (a) answer 5 wrong
- ▶ (b) answer 1 correct
- (c) answer 4 wrong
- (d) answer 2 wrong
- (e) answer 3 wrong

4. (2 punti) exercise 3b $a = 5, b = 3, c = 3$

- ▶ (a) answer 1 correct
- (b) answer 4 wrong
- (c) answer 5 wrong
- (d) answer 3 wrong
- (e) answer 2 wrong

Soluzione: answer 1

5. (1 punto) exercise 2a $a = 5, b = 4, c = 3$

- ▶ (a) answer 1 correct
- (b) answer 4 wrong
- (c) answer 2 wrong
- (d) answer 5 wrong
- (e) answer 3 wrong

6. (1 punto) exercise 14a $a = 2, b = 2, c = 8$
 $\alpha_i = 3 \alpha_{ii} = 5$

- (a) answer 4 wrong
- (b) answer 5 wrong
- (c) answer 2 wrong
- ▶ (d) answer 1 correct
- (e) answer 3 wrong

Soluzione: This is the solution $a = 2, b = 2, c = 8$

7. (1 punto) $a = 12, b = 13, c = 3, k = 4$

Evaluate with two exact decimals

$$13 : 4 = \boxed{3,25}$$

15 punti

8. (1 punto) exercise 4d $a = 2, b = 4, c = 8$

- (a) answer 3 wrong
- (b) answer 4 wrong
- (c) answer 2 wrong
- ▶ (d) answer 1 correct
- (e) answer 5 wrong

9. (1 punto) exercise 1a $a = 3$

- ▶ (a) answer 1 correct
- (b) answer 2 wrong
- (c) answer 3 wrong

10. (2 punti) exercise 9b $a = 2, b = 5, c = 6$

- (a) answer 4 wrong
- (b) answer 2 wrong
- (c) answer 3 wrong
- (d) answer 5 wrong

- ▶ (e) answer 1 correct

ALL THE PROBLEMS OF A FILE

11. (1 punto) exercise 11a

$\{b, y, z\}$

- ▶ (a) answer 1 correct
- (b) answer 3 wrong

- (c) answer 2 wrong

12. (1 punto) exercise 11b

$\{a, b, x\}$

- ▶ (a) answer 1 correct
- (b) answer 3 wrong
- (c) answer 2 wrong

SOME OTHER QUESTIONS

1. (1 punto) exercise 12a $a = 2, b = 5, c = 5$

- (a) answer 3 wrong
- (b) answer 2 wrong
- (c) answer 5 wrong
- (d) answer 4 wrong

- ▶ (e) answer 1 correct

2. (2 punti) exercise 13b $a = 2, b = 2, c = 3$

- (a) answer 4 wrong
- (b) answer 3 wrong
- (c) answer 2 wrong
- (d) answer 5 wrong

- ▶ (e) answer 1 correct

Part two

Some other instructions.

ESERCIZIO 1. Let $A = \{a,b,c\}$ and $B = \{a,c,x\}$.

(a) (2 punti) List (without repetition) the elements of the set $A \cup B$

Soluzione:

$$A \cup B = \{a,b,c,x\}$$

(b) (2 punti) List (without repetition) the elements of the set $A \cap B$

Soluzione:

$$A \cap B = \{a,c\}$$

4 punti

An example of matching question.

ESERCIZIO 2.

$a = 5, b = 4, c = 7$

(C) 5×4

(B) $7 - 5$

(A) $5 + 4$

(A) 9

(B) 2

(C) 20

<i>3 punti</i>

An example of “tabella” question.

ESERCIZIO 3. Solve the following equations:

<i>4 punti</i>

Equation	Solution
$x^2 + 9x + 18 = 0$	$x = 6; x = 3$
$x^2 - 9x + 18 = 0$	$x = -6; x = -3$
$x^2 + 3x - 18 = 0$	$x = -6; x = 3$
$x^2 - 3x - 18 = 0$	$x = 6; x = -3$

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Part One

SOME EXERCISES FROM 2 FILES

1. (1 punto) exercise 2b $a = 3, b = 4, c = 8$
- (a) answer 2 wrong
 - (b) answer 3 wrong
 - (c) answer 4 wrong
 - (d) answer 5 wrong
 - ▶ (e) answer 1 correct
2. (1 punto) exercise 2c $a = 5, b = 5, c = 8$
- ▶ (a) answer 1 correct
 - (b) answer 3 wrong
 - (c) answer 5 wrong
 - (d) answer 4 wrong
 - (e) answer 2 wrong
3. (2 punti) exercise 3a $a = 4, b = 3, c = 2$
- (a) answer 2 wrong
 - (b) answer 4 wrong
 - (c) answer 5 wrong
 - (d) answer 3 wrong
 - ▶ (e) answer 1 correct
- Soluzione:* answer 1
4. (1 punto) exercise 2a $a = 2, b = 5, c = 5$
- (a) answer 3 wrong
 - (b) answer 4 wrong
 - (c) answer 5 wrong
 - ▶ (d) answer 1 correct
 - (e) answer 2 wrong
5. (2 punti) exercise 3d $a = 5, b = 5, c = 7$
- ▶ (a) answer 1 correct
 - (b) answer 4 wrong
 - (c) answer 5 wrong
 - (d) answer 2 wrong
 - (e) answer 3 wrong
- Soluzione:* answer 1
6. (1 punto) exercise 4b $a = 3, b = 4, c = 2$
- (a) answer 5 wrong
 - ▶ (b) answer 1 correct
 - (c) answer 2 wrong
 - (d) answer 3 wrong
 - (e) answer 4 wrong
7. (2 punti) exercise 9c $a = 2, b = 4, c = 3$
- ▶ (a) answer 1 correct
 - (b) answer 4 wrong
 - (c) answer 5 wrong
 - (d) answer 3 wrong
 - (e) answer 2 wrong

15 punti

8. (1 punto) exercise 1b $a = 5$

- (a) answer 2 wrong
- (b) answer 3 wrong
- ▶ (c) answer 1 correct

9. (1 punto) exercise 14a $a = 2, b = 2, c = 3$
 $\alpha_i = 11 \alpha_{ii} = 7$

- (a) answer 3 wrong
- ▶ (b) answer 1 correct
- (c) answer 2 wrong
- (d) answer 5 wrong
- (e) answer 4 wrong

Soluzione: This is the solution $a = 2, b = 2, c = 3$

10. (1 punto) $a = 14, b = 15, c = 2, k = 5$
Evaluate with two exact decimals

$$14 : 2 = \boxed{7}$$

ALL THE PROBLEMS OF A FILE

11. (1 punto) exercise 11b

$\{a, b, c\}$

- (a) answer 3 wrong
- (b) answer 2 wrong
- ▶ (c) answer 1 correct

12. (1 punto) exercise 11a

$\{b, c, y\}$

- ▶ (a) answer 1 correct
- (b) answer 2 wrong
- (c) answer 3 wrong

SOME OTHER QUESTIONS

1. (2 punti) exercise 13c $a = 2, b = 2, c = 2$

- (a) answer 2 wrong
- (b) answer 3 wrong
- (c) answer 5 wrong
- (d) answer 4 wrong

- ▶ (e) answer 1 correct

2. (1 punto) exercise 12b $a = 5, b = 3, c = 7$

- (a) answer 3 wrong
- ▶ (b) answer 1 correct
- (c) answer 5 wrong
- (d) answer 2 wrong
- (e) answer 4 wrong

Part two

Some other instructions.

ESERCIZIO 1. Let $A = \{a,b,c\}$ and $B = \{a,c,y\}$.

(a) (2 punti) List (without repetition) the elements of the set $A \cup B$

Soluzione:

$$A \cup B = \{a,b,c,y\}$$

(b) (2 punti) List (without repetition) the elements of the set $A \cap B$

Soluzione:

$$A \cap B = \{a,c\}$$

4 punti

An example of matching question.

ESERCIZIO 2. $a = 12, b = 15, c = 4$

(E) 12×15

(D) $48 : 12$

(A) 12×15

(B) 12×15

(C) 4^4

(A) 180

(B) 180

(C) 256

(D) 4

(E) 180

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<i>3 punti</i>

An example of “tabella” question.

ESERCIZIO 3. Complete the following table of derivatives:

Function	Derivative
$f(x) = x^2$	$f'(x) = 2x$
$f(x) = \sin x$	$f'(x) = \cos x$
$f(x) = \cos x$	$f'(x) = -\sin x$

5 punti

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Part One

SOME EXERCISES FROM 2 FILES

1. (1 punto) exercise 2b $a = 5, b = 5, c = 8$
- ▶ (a) answer 1 correct
 - (b) answer 3 wrong
 - (c) answer 5 wrong
 - (d) answer 4 wrong
 - (e) answer 2 wrong
2. (1 punto) exercise 2c $a = 4, b = 3, c = 8$
- (a) answer 2 wrong
 - (b) answer 5 wrong
 - ▶ (c) answer 1 correct
 - (d) answer 4 wrong
 - (e) answer 3 wrong
3. (1 punto) exercise 2a $a = 3, b = 2, c = 7$
- (a) answer 4 wrong
 - (b) answer 5 wrong
 - ▶ (c) answer 1 correct
 - (d) answer 3 wrong
 - (e) answer 2 wrong
4. (2 punti) exercise 3d $a = 5, b = 4, c = 6$
- (a) answer 5 wrong
 - (b) answer 3 wrong
 - ▶ (c) answer 1 correct
 - (d) answer 2 wrong
 - (e) answer 4 wrong
- Soluzione:* answer 1
5. (2 punti) exercise 3b $a = 5, b = 3, c = 7$
- (a) answer 2 wrong
 - (b) answer 4 wrong
 - (c) answer 3 wrong
 - (d) answer 5 wrong
 - ▶ (e) answer 1 correct
- Soluzione:* answer 1
6. (2 punti) exercise 9a $a = 4, b = 2, c = 7$
- ▶ (a) answer 1 correct
 - (b) answer 3 wrong
 - (c) answer 5 wrong
 - (d) answer 2 wrong
 - (e) answer 4 wrong

15 punti

7. (1 punto) exercise 4e $a = 4, b = 4, c = 4$

- (a) answer 4 wrong
- (b) answer 5 wrong
- (c) answer 2 wrong
- (d) answer 3 wrong
- ▶ (e) answer 1 correct

8. (1 punto) exercise 14a $a = 4, b = 4, c = 6$
 $\alpha_i = 7 \alpha_{ii} = 3$

- (a) answer 2 wrong
- (b) answer 5 wrong
- (c) answer 3 wrong
- (d) answer 4 wrong
- ▶ (e) answer 1 correct

Soluzione: This is the solution $a = 4, b = 4, c = 6$

9. (1 punto) $a = 12, b = 15, c = 2, k = 4$
Evaluate with two exact decimals

$$15 : 4 = \boxed{3,75}$$

10. (1 punto) exercise 1a $a = 3$

- (a) answer 3 wrong
- (b) answer 2 wrong
- ▶ (c) answer 1 correct

ALL THE PROBLEMS OF A FILE

11. (1 punto) exercise 11b

$\{a, b, x\}$

- ▶ (a) answer 1 correct
- (b) answer 2 wrong
- (c) answer 3 wrong

12. (1 punto) exercise 11a

$\{a, b, z\}$

- ▶ (a) answer 1 correct
- (b) answer 3 wrong
- (c) answer 2 wrong

SOME OTHER QUESTIONS

1. (1 punto) exercise 12c $a = 5, b = 2, c = 6$

- (a) answer 5 wrong
- (b) answer 2 wrong
- ▶ (c) answer 1 correct
- (d) answer 4 wrong
- (e) answer 3 wrong

2. (2 punti) exercise 13a $a = 3, b = 4, c = 6$

- (a) answer 5 wrong
- ▶ (b) answer 1 correct
- (c) answer 4 wrong
- (d) answer 2 wrong
- (e) answer 3 wrong

Part two

Some other instructions.

ESERCIZIO 1. Let $A = \{a,b,c\}$ and $B = \{a,c,y\}$.

(a) (2 punti) List (without repetition) the elements of the set $A \cup B$

Soluzione:

$$A \cup B = \{a,b,c,y\}$$

(b) (2 punti) List (without repetition) the elements of the set $A \cap B$

Soluzione:

$$A \cap B = \{a,c\}$$

4 punti

An example of matching question.

ESERCIZIO 2.

$a = 4, b = 5, c = 4$

(C) 4×5

(B) $4 - 4$

(A) $4 + 5$

(A) 9

(B) 0

(C) 20

<i>3 punti</i>

An example of “tabella” question.

ESERCIZIO 3. Solve the following equations:

<i>4 punti</i>

Equation	Solution
$x^2 + 7x + 10 = 0$	$x = 5; x = 2$
$x^2 - 7x + 10 = 0$	$x = -5; x = -2$
$x^2 + 3x - 10 = 0$	$x = -5; x = 2$
$x^2 - 3x - 10 = 0$	$x = 5; x = -2$

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Part One

SOME EXERCISES FROM 2 FILES

1. (1 punto) exercise 2b $a = 3, b = 2, c = 7$
- (a) answer 5 wrong
 - ▶ (b) answer 1 correct
 - (c) answer 2 wrong
 - (d) answer 4 wrong
 - (e) answer 3 wrong

2. (2 punti) exercise 3b $a = 4, b = 3, c = 2$

- (a) answer 4 wrong
 - (b) answer 2 wrong
 - (c) answer 5 wrong
 - (d) answer 3 wrong
 - ▶ (e) answer 1 correct
- Soluzione: answer 1

3. (1 punto) exercise 2a $a = 4, b = 4, c = 5$

- ▶ (a) answer 1 correct
- (b) answer 3 wrong
- (c) answer 4 wrong
- (d) answer 2 wrong
- (e) answer 5 wrong

4. (2 punti) exercise 3c $a = 4, b = 2, c = 5$

- (a) answer 2 wrong
- (b) answer 4 wrong
- ▶ (c) answer 1 correct
- (d) answer 5 wrong
- (e) answer 3 wrong

Soluzione: answer 1

5. (1 punto) exercise 2c $a = 2, b = 4, c = 3$

- (a) answer 2 wrong
- (b) answer 4 wrong
- (c) answer 3 wrong
- ▶ (d) answer 1 correct
- (e) answer 5 wrong

6. (1 punto) exercise 1b $a = 3$

- (a) answer 2 wrong
- (b) answer 3 wrong
- ▶ (c) answer 1 correct

7. (2 punti) exercise 9b $a = 5, b = 5, c = 8$

- (a) answer 2 wrong
- (b) answer 4 wrong
- (c) answer 3 wrong
- ▶ (d) answer 1 correct
- (e) answer 5 wrong

15 punti

8. (1 punto) $a = 13, b = 14, c = 2, k = 4$
Evaluate with two exact decimals

$$13 : 2 =$$

6,5

9. (1 punto) exercise 4d $a = 2, b = 2, c = 3$

- (a) answer 3 wrong
- (b) answer 2 wrong
- ▶ (c) answer 1 correct
- (d) answer 4 wrong
- (e) answer 5 wrong

10. (1 punto) exercise 14a $a = 2, b = 4, c = 3$
 $\alpha_i = 5 \alpha_{ii} = 3$

- (a) answer 2 wrong
- (b) answer 5 wrong
- (c) answer 4 wrong
- (d) answer 3 wrong
- ▶ (e) answer 1 correct

Soluzione: This is the solution $a = 2, b = 4, c = 3$

ALL THE PROBLEMS OF A FILE

11. (1 punto) exercise 11b

$\{b, c, x\}$

- (a) answer 2 wrong

- ▶ (b) answer 1 correct
- (c) answer 3 wrong

12. (1 punto) exercise 11a

$\{a, b, x\}$

- ▶ (a) answer 1 correct
- (b) answer 3 wrong
- (c) answer 2 wrong

SOME OTHER QUESTIONS

1. (2 punti) exercise 13b $a = 4, b = 4, c = 6$

- (a) answer 4 wrong
- (b) answer 5 wrong
- (c) answer 3 wrong
- (d) answer 2 wrong
- ▶ (e) answer 1 correct

2. (1 punto) exercise 12b $a = 3, b = 5, c = 3$

- (a) answer 2 wrong
- (b) answer 5 wrong
- ▶ (c) answer 1 correct
- (d) answer 4 wrong
- (e) answer 3 wrong

Part two

Some other instructions.

ESERCIZIO 1. Let $A = \{a, x, y\}$ and $B = \{a, y, z\}$.

(a) (2 punti) List (without repetition) the elements of the set $A \cup B$

Soluzione:

$$A \cup B = \{a, x, y, z\}$$

(b) (2 punti) List (without repetition) the elements of the set $A \cap B$

Soluzione:

$$A \cap B = \{a, y\}$$

4 punti

An example of matching question.

ESERCIZIO 2. $a = 12, b = 15, c = 3$

(A) 5^3

(C) 12×15

(D) $60 : 12$

(E) 12×15

(B) 12×15

(A) 125

(B) 180

(C) 180

(D) 5

(E) 180

<i>3 punti</i>

An example of “tabella” question.

ESERCIZIO 3. Complete the following table of derivatives:

Function	Derivative
$f(x) = x^2$	$f'(x) = 2x$
$f(x) = \sin x$	$f'(x) = \cos x$
$f(x) = \cos x$	$f'(x) = -\sin x$

5 punti

Soluzione Versione n. 1

1. ??
2. ??
3. ??
4. ??
5. ??
6. ??
7. 3,25
8. ??
9. ??
10. ??
11. ??
12. ??

1. ??
2. ??

Soluzione Versione n. 2

1. ??
2. ??
3. ??
4. ??
5. ??
6. ??
7. ??
8. ??
9. ??
10. 7
11. ??
12. ??

1. ??
2. ??

Soluzione Versione n. 3

1. ??
2. ??
3. ??
4. ??
5. ??
6. ??
7. ??
8. ??
9. 3,75
10. ??
11. ??
12. ??

1. ??
2. ??

Soluzione Versione n. 4

1. ??
2. ??
3. ??
4. ??
5. ??
6. ??
7. ??
8. 6,5
9. ??
10. ??
11. ??
12. ??

1. ??
2. ??