The name of the exam 22nd March 2013	Prof.	Student's signature
Last Name:	First Name:	Student's ID:

INSTRUCTIONS

- Write here your instructions
- two
- three

Part One

11th April 2013

8 points

1. *(1 point)* $a = 3$, $b = 5$
Evaluate $3 + 5 =$ 8

2. *(1 point)* exercise 2c $a = 3$, $b = 5$, $c = 5$

(a) answer 5 wrong

(b) answer 2 wrong

▶ (c) answer 1 correct

(d) answer 4 wrong

(e) answer 3 wrong

3. *(1 point)* exercise 1a

(a) answer 2 wrong

▶ (b) answer 1 correct

(c) answer 3 wrong

4. *(1 point)* exercise 4b $a = 2$, $b = 2$, $c = 3$

(a) answer 4 wrong

(b) answer 3 wrong

(c) answer 5 wrong

(d) answer 2 wrong

▶ (e) answer 1 correct

5. *(2 points)* exercise 3c $a = 5$, $b = 3$, $c = 2$

(a) answer 3 wrong

(b) answer 5 wrong

(c) answer 2 wrong

(d) answer 4 wrong

▶ (e) answer 1 correct

1. *(1 point)* exercise 12c $a = 5$, $b = 5$, $c = 7$

(a) answer 4 wrong

(b) answer 2 wrong

▶ (c) answer 1 correct

(d) answer 3 wrong

(e) answer 5 wrong

2. *(2 points)* exercise 13c $a = 3$, $b = 5$, $c = 3$

(a) answer 5 wrong

▶ (b) answer 1 correct

(c) answer 3 wrong

(d) answer 4 wrong

(e) answer 2 wrong

3. *(1 point)* exercise 14b $a = 2$, $b = 4$, $c = 3$

(a) answer 3 wrong

(b) answer 4 wrong

▶ (c) answer 1 correct

(d) answer 5 wrong

(e) answer 2 wrong

4. *(1 point)* exercise 11a

$$\{a,\ b,\ z\}$$

▶ (a) answer 1 correct

(b) answer 2 wrong

(c) answer 3 wrong

Part I
One

Part two

Some other instructions.

EXERCISE 1. List all the elements of the power set (set of subsets) of

$$\{a,\ b,\ c\}$$

Solution:

$$\emptyset,\ \{a\},\ \{b\},\ \{c\},\ \{a,b\},\ \{a,c\},\ \{b,c\},\ \{a,b,c\}$$

EXERCISE 2. $a = 14$, $b = 15$, $c = 3$, $k = 5$

Evaluate $14 - 3 =$ 11 $15 : 5$ with two exact decimals 3.00 and $5^3 =$ 125

EXERCISE 3.
$a = 3$, $b = 4$, $c = 6$

(B)	$3 + 4$	(A)	12
(A)	3×4	(B)	7
(C)	$6 - 3$	(C)	3

EXERCISE 4. Solve the following equations:

Equation	Solution
$x^2 + 11x + 24 = 0$	$x = 8;\ x = 3$
$x^2 - 11x + 24 = 0$	$x = -8;\ x = -3$
$x^2 + 5x - 24 = 0$	$x = -8;\ x = 3$
$x^2 - 5x - 24 = 0$	$x = 8;\ x = -3$

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Part One

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8 points

1. *(1 point)* exercise 4e $a = 4$, $b = 5$, $c = 3$

(a) answer 2 wrong

(b) answer 3 wrong

(c) answer 4 wrong

(d) answer 5 wrong

► (e) answer 1 correct

2. *(1 point)* exercise 2b $a = 5$, $b = 5$, $c = 8$

(a) answer 5 wrong

(b) answer 3 wrong

(c) answer 4 wrong

► (d) answer 1 correct

(e) answer 2 wrong

3. *(1 point)* $a = 15$, $b = 15$, $c = 4$, $k = 4$
Evaluate with two exact decimals
$15 : 4 =$ 3.75

4. *(1 point)* exercise 1b

(a) answer 3 wrong

(b) answer 2 wrong

► (c) answer 1 correct

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

► (a) answer 1 correct

(b) answer 3 wrong

(c) answer 5 wrong

(d) answer 4 wrong

(e) answer 2 wrong

1. *(1 point)* exercise 14e $a = 5$, $b = 2$, $c = 5$

► (a) answer 1 correct

(b) answer 2 wrong

(c) answer 4 wrong

(d) answer 3 wrong

(e) answer 5 wrong

2. *(1 point)* exercise 11b

$$\{a,\ b,\ z\}$$

(a) answer 3 wrong

► (b) answer 1 correct

(c) answer 2 wrong

3. *(1 point)* exercise 12b $a = 5$, $b = 5$, $c = 6$

(a) answer 3 wrong

(b) answer 4 wrong

(c) answer 5 wrong

► (d) answer 1 correct

(e) answer 2 wrong

4. *(2 points)* exercise 13a $a = 4$, $b = 4$, $c = 6$

(a) answer 3 wrong

(b) answer 2 wrong

► (c) answer 1 correct

(d) answer 5 wrong

(e) answer 4 wrong

Part II
One

Part two

Some other instructions.

EXERCISE 1. Complete the following table of derivatives:

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

EXERCISE 2. $a = 14$, $b = 15$, $c = 3$

(B)	14×15	(A)	125
(A)	5^3	(B)	210
(C)	$70 : 14$	(C)	5

EXERCISE 3. Let $A = \{a, b, c\}$ and $B = \{a, c, x\}$.

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

Solution:

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

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

Solution:

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

EXERCISE 4. $a = 13$, $b = 15$, $c = 4$, $k = 5$

If $A = \{a, b, c, d, 13, 4, 5\}$ and $B = \{c, a, 4, 1, 15\}$ then

$A \cup B =$ $\{a, b, c, d, 13, 4, 5, 15, 1\}$

$A \cap B =$ $\{a, c, 4\}$

$A \setminus B =$ $\{b, d, 5\}$

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Part One

11th April 2013

8 points

1. *(1 point)* $a = 5$, $b = 4$
Evaluate $5 + 4 =$ 9

2. *(1 point)* exercise 2c $a = 5$, $b = 5$, $c = 8$

(a) answer 2 wrong

► (b) answer 1 correct

(c) answer 3 wrong

(d) answer 4 wrong

(e) answer 5 wrong

3. *(1 point)* exercise 4d $a = 2$, $b = 5$, $c = 5$

(a) answer 2 wrong

► (b) answer 1 correct

(c) answer 3 wrong

(d) answer 4 wrong

(e) answer 5 wrong

4. *(1 point)* exercise 1a

► (a) answer 1 correct

(b) answer 2 wrong

(c) answer 3 wrong

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

► (a) answer 1 correct

(b) answer 2 wrong

(c) answer 5 wrong

(d) answer 3 wrong

(e) answer 4 wrong

1. *(1 point)* exercise 11a

$$\{a,\ x,\ y\}$$

► (a) answer 1 correct

(b) answer 2 wrong

(c) answer 3 wrong

2. *(1 point)* exercise 12c $a = 4$, $b = 3$, $c = 3$

(a) answer 4 wrong

► (b) answer 1 correct

(c) answer 2 wrong

(d) answer 3 wrong

(e) answer 5 wrong

3. *(2 points)* exercise 13b $a = 5$, $b = 5$, $c = 8$

(a) answer 2 wrong

(b) answer 3 wrong

(c) answer 5 wrong

► (d) answer 1 correct

(e) answer 4 wrong

4. *(1 point)* exercise 14d $a = 3$, $b = 3$, $c = 5$

► (a) answer 1 correct

(b) answer 2 wrong

(c) answer 5 wrong

(d) answer 3 wrong

(e) answer 4 wrong

Part III
One

Part two

Some other instructions.

EXERCISE 1. Solve the following equations:

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

EXERCISE 2.
$a = 5$, $b = 4$, $c = 8$

(C)	5×4	(A) 3
(B)	$5 + 4$	(B) 9
(A)	$8 - 5$	(C) 20

EXERCISE 3. List all the elements of the power set (set of subsets) of

$$\{a,\ c,\ x\}$$

Solution:

$$\emptyset,\ \{a\},\ \{c\},\ \{x\},\ \{a, c\},\ \{a, x\},\ \{c, x\},\ \{a, c, x\}$$

EXERCISE 4. $a = 15$, $b = 15$, $c = 2$, $k = 5$

Evaluate $15 - 2 =$ 13 $15 : 5$ with two exact decimals 3.00 and $5^2 =$ 25

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Part One

11th April 2013

8 points

1. *(1 point)* exercise 4b $a = 4$, $b = 2$, $c = 8$

(a) answer 5 wrong

▶ (b) answer 1 correct

(c) answer 3 wrong

(d) answer 2 wrong

(e) answer 4 wrong

2. *(1 point)* exercise 1b

(a) answer 2 wrong

(b) answer 3 wrong

▶ (c) answer 1 correct

3. *(1 point)* exercise 2a $a = 3$, $b = 2$, $c = 3$

▶ (a) answer 1 correct

(b) answer 2 wrong

(c) answer 3 wrong

(d) answer 5 wrong

(e) answer 4 wrong

4. *(1 point)* $a = 14$, $b = 13$, $c = 2$, $k = 5$
Evaluate with two exact decimals
$13 : 5 =$ 2.60

5. *(2 points)* exercise 3c $a = 5$, $b = 2$, $c = 6$

▶ (a) answer 1 correct

(b) answer 5 wrong

(c) answer 4 wrong

(d) answer 3 wrong

(e) answer 2 wrong

1. *(1 point)* exercise 11b

$$\{b,\ c,\ z\}$$

(a) answer 2 wrong

(b) answer 3 wrong

▶ (c) answer 1 correct

2. *(2 points)* exercise 13c $a = 3$, $b = 3$, $c = 4$

(a) answer 3 wrong

(b) answer 2 wrong

(c) answer 5 wrong

(d) answer 4 wrong

▶ (e) answer 1 correct

3. *(1 point)* exercise 14b $a = 4$, $b = 4$, $c = 6$

(a) answer 3 wrong

(b) answer 4 wrong

(c) answer 5 wrong

(d) answer 2 wrong

▶ (e) answer 1 correct

4. *(1 point)* exercise 12a $a = 2$, $b = 4$, $c = 3$

(a) answer 2 wrong

(b) answer 3 wrong

(c) answer 4 wrong

▶ (d) answer 1 correct

(e) answer 5 wrong

Part IV
One

Part two

Some other instructions.

EXERCISE 1. $a = 12$, $b = 14$, $c = 4$

(A)	12×14	(A)	168
(B)	$60 : 12$	(B)	5
(C)	5^4	(C)	625

EXERCISE 2. Complete the following table of derivatives:

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

EXERCISE 3. $a = 13$, $b = 14$, $c = 3$, $k = 4$
If $A = \{a, b, c, d, 13, 3, 4\}$ and $B = \{c, a, 3, 1, 14\}$ then
$A \cup B =$ $\{a, b, c, d, 13, 3, 4, 14, 1\}$
$A \cap B =$ $\{a, c, 3\}$
$A \setminus B =$ $\{b, d, 4\}$

EXERCISE 4. Let $A = \{a, b, c\}$ and $B = \{a, c, z\}$.

(a) *(2 points)* List (without repetition) the elements of the set $A \cup B$
Solution:

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

(b) *(2 points)* List (without repetition) the elements of the set $A \cap B$
Solution:

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