

Exercises from *Matrix Groups for Undergraduates*  
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# Contents

<b>1</b>	<b>Matrices</b>	<b>1</b>
1.1	Exercises . . . . .	1
<b>2</b>	<b>All matrix groups are real matrix groups</b>	<b>3</b>
2.1	Exercises . . . . .	3
<b>3</b>	<b>The orthogonal groups</b>	<b>5</b>
3.1	Exercises . . . . .	5
<b>4</b>	<b>The topology of matrix groups</b>	<b>7</b>
4.1	Exercises . . . . .	7
<b>5</b>	<b>Lie algebras</b>	<b>9</b>
5.1	Exercises . . . . .	9
<b>6</b>	<b>Matrix exponentiation</b>	<b>11</b>
6.1	Exercises . . . . .	11
<b>7</b>	<b>Matrix groups are manifolds</b>	<b>13</b>
7.1	Exercises . . . . .	13
<b>8</b>	<b>The Lie bracket</b>	<b>15</b>
8.1	Exercises . . . . .	15
<b>9</b>	<b>Maximal tori</b>	<b>17</b>
9.1	Exercises . . . . .	17
<b>10</b>	<b>Homogeneous manifolds</b>	<b>19</b>
10.1	Exercises . . . . .	19
<b>11</b>	<b>Roots</b>	<b>21</b>
11.1	Exercises . . . . .	21



# Chapter 1

## Matrices

### 1.1 Exercises

**Exercise 1.1.** Describe a natural 1-to-1 correspondence between elements of  $\text{SO}(3)$  and

**Solution.** Placeholder for your solution.

□



# Chapter 2

## All matrix groups are real matrix groups

### 2.1 Exercises

**Exercise 2.1.** Another exercise goes here.

**Solution.** Placeholder for your solution.

□





# Chapter 3

## The orthogonal groups

### 3.1 Exercises

**Exercise 3.1.** Another exercise goes here.

**Solution.** Placeholder for your solution.

□



# Chapter 4

## The topology of matrix groups

### 4.1 Exercises

**Exercise 4.1.** Another exercise goes here.

**Solution.** Placeholder for your solution.

□



# Chapter 5

## Lie algebras

### 5.1 Exercises

**Exercise 5.1.** Another exercise goes here.

**Solution.** Placeholder for your solution.

□



# Chapter 6

## Matrix exponentiation

### 6.1 Exercises

**Exercise 6.1.** Another exercise goes here.

**Solution.** Placeholder for your solution.

□





# Chapter 7

## Matrix groups are manifolds

### 7.1 Exercises

**Exercise 7.1.** Another exercise goes here.

**Solution.** Placeholder for your solution.

□



# Chapter 8

## The Lie bracket

### 8.1 Exercises

**Exercise 8.1.** Another exercise goes here.

**Solution.** Placeholder for your solution.

□



# Chapter 9

## Maximal tori

### 9.1 Exercises

**Exercise 9.1.** Another exercise goes here.

**Solution.** Placeholder for your solution.

□



# Chapter 10

## Homogeneous manifolds

### 10.1 Exercises

**Exercise 10.1.** Another exercise goes here.

**Solution.** Placeholder for your solution.

□





# Chapter 11

## Roots

### 11.1 Exercises

**Exercise 11.1.** Another exercise goes here.

**Solution.** Placeholder for your solution.

□