2장

1

```
public class a2 {
	static String  name="hello, java application";


	public static void main(String[] args) {
		System.out.println(name);
	}
}
```

==========

2

```
public class TypeInt {

	public static void main(String[] args) {
	int a=0, b=5, c=10, d=20;
	System.out.printf("%d, %d, %d, %d",a,b,c,d);
	}

}
```

==========

3

```
package exercise;

public class HelloAndroid {

	public static void main(String[] args) {
		String str = "Heloo, Android Application";
		System.out.println(str);
	}

}
```

==========

4

```
package conversion;

public class ToYard {

	public static void main(String[] args) {
```

```
		double meter = 100.785;
		System.out.println(meter * 1.0936);

	}

}
```

==========

5

```
package character;

public class CharTest {

	public static void main(String[] args) {
		char s = 'B';
		System.out.println(s);
		System.out.printf("%c", s);

	}

}
```

==========

6

```
public class ToCode {

	public static void main(String[] args) {
		char s = '자';
		System.out.println(s);
		s = '\uc790';
		System.out.printf("%c", s);
	}

}
```

==========

7

```
public class PersonInfo {

	public static void main(String[] args) {
		java.util.Scanner input = new java.util.Scanner(System.in);
		System.out.printf("몸무게와 키를 입력하세요");
		int weight = input.nextInt();
```

```
		float height = input.nextFloat();
		System.out.println("몸무게:" + weight + ", 키:" + height);

	}

}

/*
 * public class PersonInfo {
 *
 * public static void main(String[] args) {
 * java.util.Scanner input = new java.util.Scanner(System.in);
 * System.out.println("몸무게와 키를 입력하세요");
 * int weight= input.nextInt();
 * float height = input.nextFloat();
 * System.out.printf("몸무게=%d, 키=%f", weight, height);
 * }
 * }
 */
```

==========

8

```
public class ToPound {

	public static void main(String[] args) {
		java.util.Scanner input = new java.util.Scanner(System.in);

		System.out.println("kg로 무게를 입력하세요.");
		double kg = input.nextDouble();

		System.out.printf("%fkg은 %f파운드입니다.", kg, kg * 2.2);

	}

}
```

==========

9

```
public class ToDigit {

	public static void main(String[] args) {
		java.util.Scanner input = new java.util.Scanner(System.in);
```

```
		System.out.println("정수를 입력하세요.");

		int k = input.nextInt();
		System.out.printf("%o %d %h %n", k, k, k);

	}

}
```

==========

10

```
public class NumberTable {

	public static void main(String[] args) {
		System.out.format("%1$o %1$d %1$x %n", 0b1);
		System.out.format("%1$o %1$d %1$x %n", 0b10);
		System.out.format("%1$o %1$d %1$x %n", 0b11);
		System.out.format("%1$o %1$d %1$x %n", 0b100);
		System.out.format("%1$o %1$d %1$x %n", 0b101);
		System.out.format("%1$o %1$d %1$x %n", 0b110);
		System.out.format("%1$o %1$d %1$x %n", 0b111);
		System.out.format("%1$o %1$d %1$x %n", 0b1000);
		System.out.format("%1$o %1$d %1$x %n", 0b1001);
		System.out.format("%1$o %1$d %1$x %n", 0b1010);
		System.out.format("%1$o %1$d %1$x %n", 0b1011);
		System.out.format("%1$o %1$d %1$x %n", 0b1110);
		System.out.format("%1$o %1$d %1$x %n", 0b1111);
	}

}
```

3장

1

```
import java.util.Scanner;

public class TestA {
	public static void main(String[] args) {
		Scanner input = new Scanner(System.in);
		System.out.println("입력한 두 실수의 합과 평균을 구하세요.");
```

```
                double a = input.nextDouble();
                double b = input.nextDouble();
                System.out.println("합:" + (a + b) + ", 평균:" + (a + b) / 2);

        }

}
```

==========

2

```
import java.util.Scanner;

public class TestB {

        public static void main(String[] args) {
                Scanner input = new Scanner(System.in);
                System.out.println("두 실수를 정수로 변환하여 합과 평균을 구하세요.");
                double a = input.nextDouble();
                double b = input.nextDouble();
                int s = (int)a+(int)b;
                int m =((int)a+(int)b)/2;
                System.out.print("합:" + s + ", 평균:" + m);

        }

}
```

==========

3

```
import java.util.Scanner;

public class TestC {

        public static void main(String[] args) {
                Scanner input = new Scanner(System.in);
                System.out.print("무게(kg) 입력:");
                double a = input.nextDouble();
                System.out.printf("%.3f, %.3f %n",a, a /.453592);

        }

}
```

==========
4
```
import java.util.Scanner;

public class TestD {

	public static void main(String[] args) {
		Scanner s = new Scanner(System.in);
		double input, output;
		String ch;

		System.out.printf("입력한 온도를 변환합니다.\n");
		System.out.printf("문자를  F나f를 입력하면 섭씨로,");
		System.out.printf("문자를 C나c를 입력하면 화씨로 변환합니다.\n\n");
		System.out.printf("문자 입력:");
		ch = s.next();
		System.out.printf("온도 입력:");
		input = s.nextDouble();

		switch (ch) {
		case "F":
		case "f":
			output = ((float) 5 / 9) * (input - 32);
			System.out.printf("\n화씨온도%.2f는 섭씨온도로 %.2f입니다.\n",
input, output);
			break;

		case "C":
		case "c":
			output = ((float) 9 / 5) * input + 32;
			System.out.printf("\n섭씨온도 %.2f의 화씨온도는 %.2f입니
다.\n", input, output);
			break;

		default:
			System.out.printf("/n잘못된 문자를 입력했습니다.\n");
		}
	}

}
```

```
================================================================================
5
import java.util.Scanner;

public class TestE {

	public static void main(String[] args) {
		Scanner input = new Scanner(System.in);
		System.out.printf("년도 입력:");
		int y = input.nextInt();
		if ((y % 4 == 0) && (y % 100 != 0) || (y % 400 == 0))
			System.out.printf("%d년은 윤년도 입니다\n", y);
		else
			System.out.printf("%d년은 윤년도가 아닙니다.\n", y);
	}

}

================================================================================
6
import java.util.Scanner;

public class TestF {

	public static void main(String[] args) {
		Scanner input = new Scanner(System.in);
		System.out.print("천만이하의 정수하나를 입력:");
		int n = input.nextInt();
		System.out.printf("입력한 수 %d는", n);
		System.out.printf("%d만", n / 10000);
		System.out.printf("%d천", n % 10000 / 1000);
		System.out.printf("%d백", n % 1000 / 100);
		System.out.printf("%d십", n % 100 / 10);
		System.out.printf("%d입니다.", n % 10);

	}

}
/*
 * import java.util.Scanner;
```

```
 *
 * public class TestF {
 *
 * public static void main(String[] args) {
 * Scanner input = new Scanner(System.in);
 * System.out.print("천만이하의 정수하나를 입력:");
 * int n =input.nextInt();
 * int a = n / 10000;
 * int b = (n % 10000) / 1000;
 * int c = ((n % 10000) % 1000) / 100;
 * int d = ((n % 10000) % 1000) % 100/ 10;
 * int e = ((((n % 10000) % 1000) % 100) % 10) / 1;
 * System.out.printf("%d만 %d천 %d백 %d십 %d입니다.%n", a, b, c, d, e);
 *       }
 * }
 */
```

7

```
import java.util.Scanner;

public class TestG {

        public static void main(String[] args) {
                Scanner input = new Scanner(System.in);
                System.out.print("월 입력:");
                int m = input.nextInt();
                System.out.printf(m > 6 ? "상반기입니다." : "하반기입니다.");

        }

}
```

8

```
import java.util.Scanner;

public class TestH  {
public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.println("숫자3개를입력해수세요.");
int a = input.nextInt();
int b = input.nextInt();
int c = input.nextInt();
```

```
System.out.printf("제일큰수는%d입니다.",a>ba>ca:c):(b>cb:c));
}
}
```

==========

9

```
import java.util.Scanner;

public class TestI {

	public static void main(String[] args) {
		Scanner input = new Scanner(System.in);
		System.out.print("몸무게:");
		double w = input.nextDouble();
		System.out.print("키:");
		double h = input.nextDouble();

		System.out.printf("%s입니다\n", w <= (h - 100) * 0.9 ? "정상" : "비만
");

	}

}
```

==========

10

```
import java.util.Scanner;

public class TestJ {

	public static void main(String[] args) {
		Scanner input = new Scanner(System.in);
		System.out.print("지불할 금액(최소 천 원 단위로):");
		int n = input.nextInt();
		System.out.printf("입력한 수:%d %n", n);
		System.out.printf("50000원권 %d개 %n", n / 50000);
		System.out.printf("10000원권 %d개 %n", n % 50000 / 10000);
		System.out.printf("5000원권 %d개 %n", n % 10000 / 5000);
		System.out.printf("1000원권 %d개 %n", n % 5000 / 1000);

	}
```

```
}
```

4장

```
public class ch04_1 {

	public static void main(String[] args) {
		int count = 1, i;
		for (i = 1; i <= 100; i++) {
			if (i % 2 != 0 && i % 3 != 0 && i % 5 != 0 && i % 7 != 0)
				System.out.printf("%3d%c", i, (count++ % 10 != 0) ? '
' : '\n');

		}
		System.out.println();
	}

}
/*

public class ch04_1 {

	public static void main(String[] args) {
		int i=1;
		for (i = 1,j=1; i <= 100; i++) {
			if (i % 2 == 0 || i % 3 == 0 || i % 5 == 0 || i % 7 == 0)
				System.out.printf(i +" ");
				j++;
				if(j%10==1)
				System.out.println();
		}
	}
}
 */
================================================================================
public class ch04_2 {

	public static void main(String[] args) {
		int a, b;

		for (a = 0; a <= 7; a++) {
```

```
                        for (int c = 7; c > a; c--) {
                                System.out.printf(" ");
                        }
                        for (b = 0; b <= a * 2; b++)
                                System.out.printf("%d", (a >= b ? a - b : b - a));
                        System.out.println();
                }
        }

}
```

==========

```
import java.util.Scanner;

public class ch04_3 {

        public static void main(String[] args) {
                Scanner input = new Scanner(System.in);
                int a = input.nextInt();

                do {
                        System.out.print(a % 10);
                        a /= 10;
                } while (a != 0);

        }

}
```

==========

```
public class ch04_4 {

        public static void main(String[] args) {
                double x, y;
                for (x = 5; x <= 10; x += 0.5) {
                        y = 4 * x * x * x + 5 * x * x + x + 2;
                        System.out.printf("x=%.2f이면 y=%.2f이다. %n", x, y);
                }
        }

}
```

==========

```
public class ch04_5 {
```

```
	public static void main(String[] args) {
		final double rate = 0.045;
		double origin = 1_000000, total;

		for (int i = 1; i <= 10; i++) {
			total = origin * (1 + rate * i);
			System.out.printf("%2d년 총금액 : %.2f\n", i, total);
		}
	}
}
================================================================================
public class ch04_6 {

	public static void main(String[] args) {
		double C, F;
		for (C = -60; C <= 140; C += 20) {
			F = (9.0 / 5.0) * C + 32;
			System.out.printf("섭씨온도가 %d이면 화씨온도는 %d이다 %n",
(int) C, (int) F);
		}

	}

}
================================================================================
public class ch04_7 {
	final static int limit = 5000;

	public static void main(String[] args) {
		int i = 0, sum = 0;

		do {
			sum += ++i;
		} while (sum <= limit);

		System.out.printf("1부터 n까지의 합 중에서 %d를 넘지 않는 가장 큰 합
은?\n", limit);
		System.out.printf("1부터 %d까지의 합이 %d입니다.\n", i - 1, sum - i);
	}
}
```

```
================================================================================
public class ch04_8 {

	public static void main(String[] args) {
		int a[][]={{78,48,78,98},{99,92},{29,64,83},{34,78,92,56}};


		for(int i=0;i<a.length;i++){
			int sum=0;
			for(int j=0;j<a[i].length;j++){
				sum+=a[i][j];
				System.out.print(a[i][j]+" ");
			}
			System.out.printf("\t합 %d, 평균 %f %n",
sum,(double)sum/a[i].length);
		}
	}
}
```

5장

```
public class Student {
	String name;// 학과
	int number;// 학번

	public static void main(String[] args) {
		Student i = new Student();
		i.name = "컴퓨터정보공학과";
		i.number = 20190665;
		System.out.printf("학과 :" + i.name + ", 학번 :" + i.number);

	}
}
================================================================================
public class Student {
	private String name;// 학과
	private int number;// 학번

	public String getName(){
		return name;
```

```
	}
	public void setName(String name){
		this.name=name;
	}
	public int getNumber(){
		return number;
	}
	public void setNumber(int number){
		this.number=number;
	}

	public static void main(String[] args) {
		Student i = new Student();
		i.setName("컴퓨터소프트웨어과");
		i.setNumber(20190155);
		System.out.printf("학과 :" + i.getName() + ", 학번 :" + i.getNumber());

	}
}
================================================================================
public class Circle {
	public double radius;
	public static double PI = 3.141592;

	public Circle(double radius) {
		this.radius = radius;
	}

	public double getArea() {
		return radius * radius * PI;
	}
}



public class Cylinder {
	public Circle c;
	public double h;

	public double getVolume(){
		return c.getArea()*h;
```

```
	}

	public static void main(String[] args) {
		Cylinder cd = new Cylinder();
		cd.c=new Circle(2.6);
		cd.h=23.69;
		System.out.println(cd.getVolume());

	}
}
================================================================================
public class Cylinder {
	public Circle c;
	public double h;

	public double getVolume(){
		return c.getArea()*h;
	}

	public Cylinder(Circle c, double h){
		this.c=c;
		this.h=h;
	}



	public static void main(String[] args) {
		Cylinder cd = new Cylinder(new Circle(2.8),5.6);
		cd.h=23.69;
		System.out.println(cd.getVolume());

	}
}
================================================================================
public class SalaryMan {
	int salary = 1_000_000;

	public SalaryMan() {
	}

	public SalaryMan(int salary) {
```

```
		this.salary = salary;
	}

	int getAnnualGross() {
		return salary * 12 + salary * 5;
	}

	public static void main(String[] args) {
		System.out.println(new SalaryMan().getAnnualGross());
		System.out.println(new SalaryMan(2_000_000).getAnnualGross());

	}
}
================================================================================
public class Account {
	private String owner;
	private long balance;

	public Account() {
	}

	public Account(String owner) {
		this.owner = owner;
	}

	public Account(long balance) {
		this.balance = balance;
	}

	public Account(String owner, long balance) {
		this(owner);
		this.balance = balance;
	}

	public Account(long balance, String owner) {
		this(owner);
		this.balance = balance;
	}

	public String getOwner() {
		return owner;
```

```
	}

	public void setOwner(String owner) {
		this.owner = owner;
	}

	public long getBalance() {
		return balance;
	}

	public void setBalance(long balance) {
		this.balance = balance;
	}
}
================================================================================
public class Account {
	private String owner;
	private long balance;

	public Account() {
	}

	public Account(String owner) {
		this.owner = owner;
	}

	public Account(long balance) {
		this.balance = balance;
	}

	public Account(String owner, long balance) {
		this(owner);
		this.balance = balance;
	}

	public Account(long balance, String owner) {
		this(owner);
		this.balance = balance;
	}

	public String getOwner() {
```

```
		return owner;
	}

	public void setOwner(String owner) {
		this.owner = owner;
	}

	public long getBalance() {
		return balance;
	}

	public void setBalance(long balance) {
		this.balance = balance;
	}

	public long deposit(long amount) {
		return this.balance += amount;
	}

	public long withdraw(long amount) {
		return this.balance -= amount;
	}

	public static void main(String[] args) {
		Account act = new Account("최여진", 10000);
		act.deposit(1000000);
		act.withdraw(500000);
		act.deposit(20000);
		act.withdraw(200000);
		System.out.printf("%d %n", act.getBalance());
	}
}
================================================================================
public class Account {
	private String owner;
	private long balance;

	public Account() {
	}

	public Account(String owner) {
```

```
        this.owner = owner;
}

public Account(long balance) {
        this.balance = balance;
}

public Account(String owner, long balance) {
        this(owner);
        this.balance = balance;
}

public Account(long balance, String owner) {
        this(owner);
        this.balance = balance;
}

public String getOwner() {
        return owner;
}

public void setOwner(String owner) {
        this.owner = owner;
}

public long getBalance() {
        return balance;
}

public void setBalance(long balance) {
        this.balance = balance;
}

public long deposit(long amount) {
        return this.balance += amount;
}

public long withdraw(long amount) {
        long money = amount;
        if (balance < amount) {
                money = this.balance;
```

```
                        System.out.print("잔금이 부족해 현재 잔금만 인출합니다. ");
                }
                System.out.println("인출 금액: " + money);
                return this.balance -= money;
        }

        public static void main(String[] args) {
                Account act = new Account("최여진", 100000);
                act.deposit(200000);
                act.withdraw(100000);
                act.withdraw(400000);
                System.out.printf("%d %n", act.getBalance());
        }
}
================================================================================
public class Rectangle {
        double width;
        double height;

        public Rectangle(double width, double height) {
                this.width = width;
                this.height = height;
        }

        public double getArea() {
                return width * height;
        }

        public double getCircumference() {
                return 2 * (width + height);
        }

        public static void main(String[] args) {
                Rectangle rc = new Rectangle(3.82, 8.65);
                System.out.println("면적: " + rc.getArea());
                System.out.println("둘레: " + rc.getCircumference());

        }
}
================================================================================
public class Computer {
```

```
	public static final String[] osType = { "윈도우7", "애플 os x", "안드로이드" };

	private int OS;
	int mainMemory = 8;

	public Computer(int OS, int mainMemory) {
		this.OS = OS;
		this.mainMemory = mainMemory;
	}

	public void print() {
		System.out.printf("운영체제: %s, 메인모모리: %d %n", osType[OS],
mainMemory);
	}

	public static void main(String[] args) {
		Computer pc = new Computer(0, 16);
		Computer apple = new Computer(1, 32);
		Computer galaxy = new Computer(2, 16);
		pc.print();
		apple.print();
		galaxy.print();

	}
}
```

6장

```
public class Employee {
	String name;
	int age;
	String address;
	String part;
	long salary;

	public Employee(String name, int age, String address, String part) {
		this.name = name;
		this.age = age;
		this.address = address;
		this.part = part;
```

```
	}

	public void printInfo() {
		System.out.println("이름 : " + this.name + ", 나이 : " + this.age);
		System.out.println("주소 : " + this.address + ", 부서 : " + this.part);
	}

	public static void main(String[] args) {
		Regular r = new Regular("이순신", 35, "서울", "인사부");
		Temporary t = new Temporary("장보고", 25, "인천", "경리부");
		r.setSalary(5000000);
		r.printInfo();
		t.setWorkHours(120);
		t.printInfo();
	}
}
================================================================================
public class Regular extends Employee {
	public Regular(String name, int age, String add, String part) {
		super(name, age, add, part);
	}

	public void setSalary(long salary) {
		this.salary = salary;
	}

	public void printInfo() {
		super.printInfo();
		System.out.println("이 직원은 정규직 직원입니다.");
		System.out.println("이 직원의 월 급여는 " + this.salary + "원 입니다.");
	}
}
================================================================================
public class Temporary extends Employee {
	int workHours;
	int payOfHour = 10000;

	public Temporary(String name, int age, String add, String part) {
		super(name, age, add, part);
	}
```

```
	public void setWorkHours(int hour) {
		this.workHours = hour;
		this.salary = this.workHours * this.payOfHour;
	}

	public void printInfo() {
		super.printInfo();
		System.out.println("이 직원으 임시직 직원입니다.");
		System.out.println("이 직원의 시간다 급여는 " + this.payOfHour + "원
입니다.");
		System.out.println("이 달에는 " + this.workHours + "시간을 일을 해 월
급이 " + salary + "입니다");
	}
}
================================================================================
5
public abstract class Fruit {
	abstract void print();
	public static void main(String[] args) {
		Fruit fary[]={new Grape(),new Apple(),new Pear()};

		for(Fruit f: fary)
			f.print();
	}

}

-------------------------------------------------
public class Pear extends Fruit{

	void print() {
		System.out.println("나는 배다.");
	}

}

-------------------------------------------------
public class Apple  extends Fruit{

	void print() {
		System.out.println("나는 사과다.");
```

```
	}



}

-------------------------------------------------
public class Grape  extends Fruit{
	void print() {
		System.out.println("나는 포도다.");
	}

}
================================================================================
6
public class Car {
	int maxspeed;
	int speed;

	public Car(int maxspeed) {
		this.maxspeed = maxspeed;
	}

	public void speedup() {
		this.speed+=5;
		if(speed>=300){
			this.speed=300;
			System.out.println("최대속도보다 높아 최대속도로 지정, 최대속
도:"+maxspeed+", 현재속도: "+speed);
			return;
		}
		System.out.println("최대속도: "+maxspeed+", 현재속도: "+speed);
	}

	public void speedup(int speed) {
		if(speed<0){
			System.out.println("오류: 속도가 음수이므로 0으로 지정: 최대속
도: "+maxspeed+", 현재속도: "+this.speed);
			return;
		}
		this.speed+=speed;
```

```
                if(this.speed>=300){
                        this.speed=300;
                        System.out.println("최대속도보다 높아 최대속도로 지정, 최대속
도:"+maxspeed+", 현재속도: "+this.speed);
                        return;
                }

                System.out.println("최대속도: "+maxspeed+", 현재속도: "+this.speed);
        }
        public void speeddown(){
                this.speed-=5;
                if(speed<0){
                        speed=0;
                        System.out.println("속도가 0보다 작아져 0으로 지정, 최대속
도:"+maxspeed+", 현재속도: "+speed);
                        return;
                }
                System.out.println("최대속도: "+maxspeed+", 현재속도: "+speed);
        }
        public void speeddown(int speed){
                if(speed<0){
                        System.out.println("오류: 속도가 음수이므로 0으로 지정: 최대속
도: "+maxspeed+", 현재속도: "+this.speed);
                        return;
                }
                this.speed-=speed;
                if(this.speed<0){
                        this.speed=0;
                        System.out.println("속도가 0보다 작아져 0으로 지정, 최대속
도:"+maxspeed+", 현재속도: "+this.speed);
                        return;
                }

                System.out.println("최대속도: "+maxspeed+", 현재속도: "+this.speed);
        }
        public static void main(String[] args) {
                Car mycar = new Car(300);
                mycar.speedup();
                mycar.speedup();
                mycar.speedup(-50);
                mycar.speedup(50);
```

```
                mycar.speeddown(-30);
                mycar.speeddown(30);
                mycar.speeddown(30);
                mycar.speeddown(30);
                mycar.speedup(100);
                mycar.speedup(300);


        }
}
```

==========

7

```
package univ;

public class Person {
        String name;
        int age;
        String address;
}
```

```
package univ;

import java.util.Scanner;

public class Student extends Person {
        String school;
        String major;
        long num;

        double jum[] = new double[8];

        public Student(String school, String major, long num) {
                this.school = school;
                this.major = major;
                this.num = num;
        }

        public double average() {
```

```
		doubluj n e aver = 0;
		for (int i = 0; i < jum.length; i++) {
			aver = aver + jum[i];
		}
		return (double) aver / jum.length;
	}

	public static void main(String ars[]) {
		Scanner s = new Scanner(System.in);
		Student me = new Student("동양서울대학교", "전산정보학과", 20132222);
		me.name = "김다정";
		me.age = 20;
		me.address = "서울시 관악구";
		System.out.println("이름 : " + me.name);
		System.out.println("나이 : " + me.age);
		System.out.println("주소 : " + me.address);
		System.out.println("학교 : " + me.school);
		System.out.println("학과 : " + me.major);
		System.out.println("학번 : " + me.num);
		System.out.println("----------------------------------------");
		System.out.println("8학기 학점을 순서대로 입력하세요");

		for (int i = 0; i < 8; i++) {
			System.out.print((i + 1) + "학기 학점->");
			me.jum[i] = s.nextDouble();
		}
		System.out.println("----------------------------------------");
		System.out.println("8학기 총 평균 평점은 " + me.average() + "점입니
다.");
	}
}
```