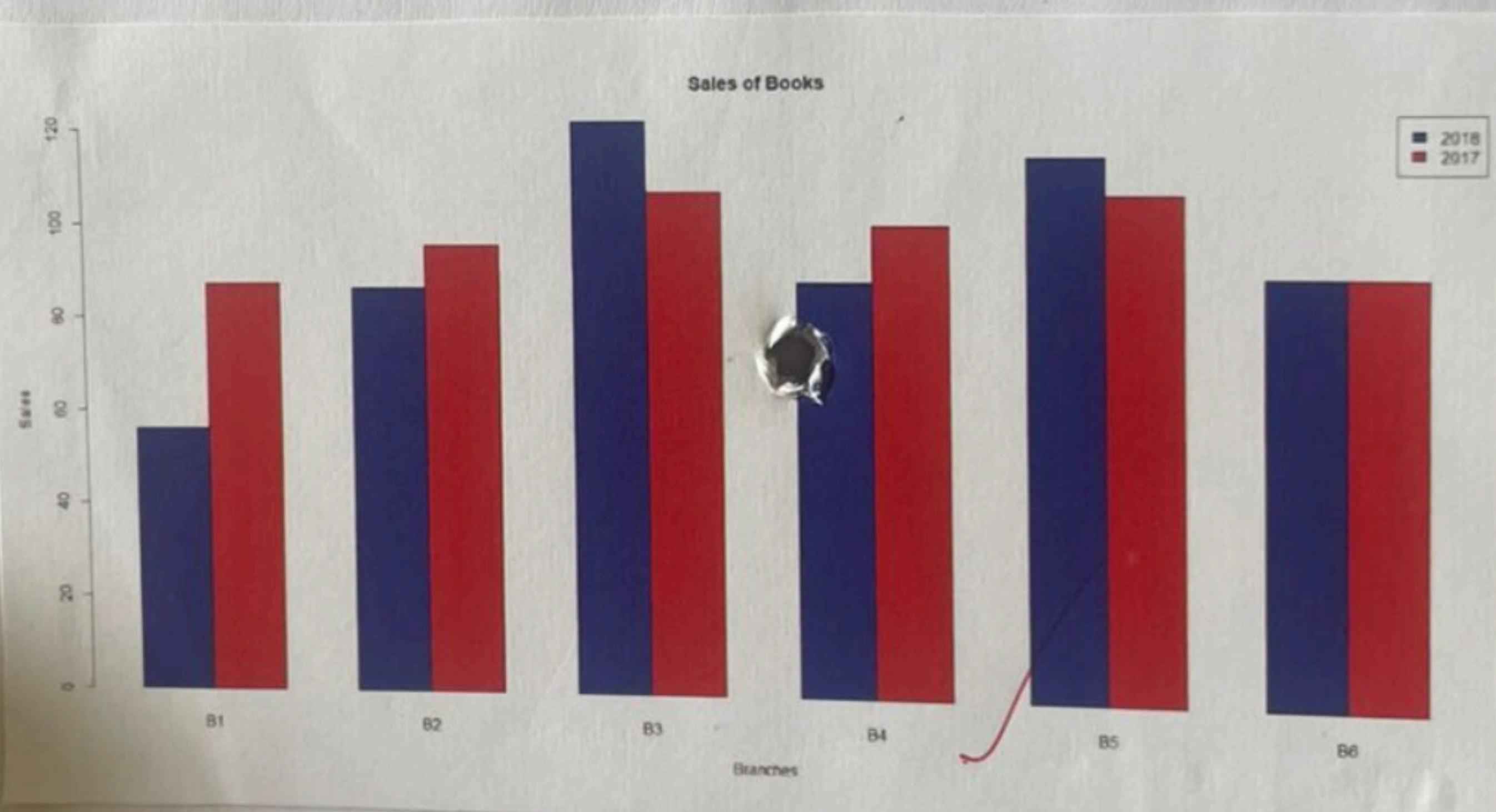


Program

```
branches <- c("B1", "B2", "B3", "B4", "B5", "B6"); branches  
years <- c("2018", "2017"); years  
values <- matrix(c(56, 86, 121, 87, 113, 88, 87, 95, 106, 99, 105, 88),  
byrow = TRUE, nrow = 2); values  
barplot(values, names.arg = branches, xlab = "Branches", ylab = "Sales",  
main = "Sales of Books", beside = TRUE, col = c("blue", "red"))  
legend("topright", years, cex = 1.0, fill = c("blue", "red"))
```

Output



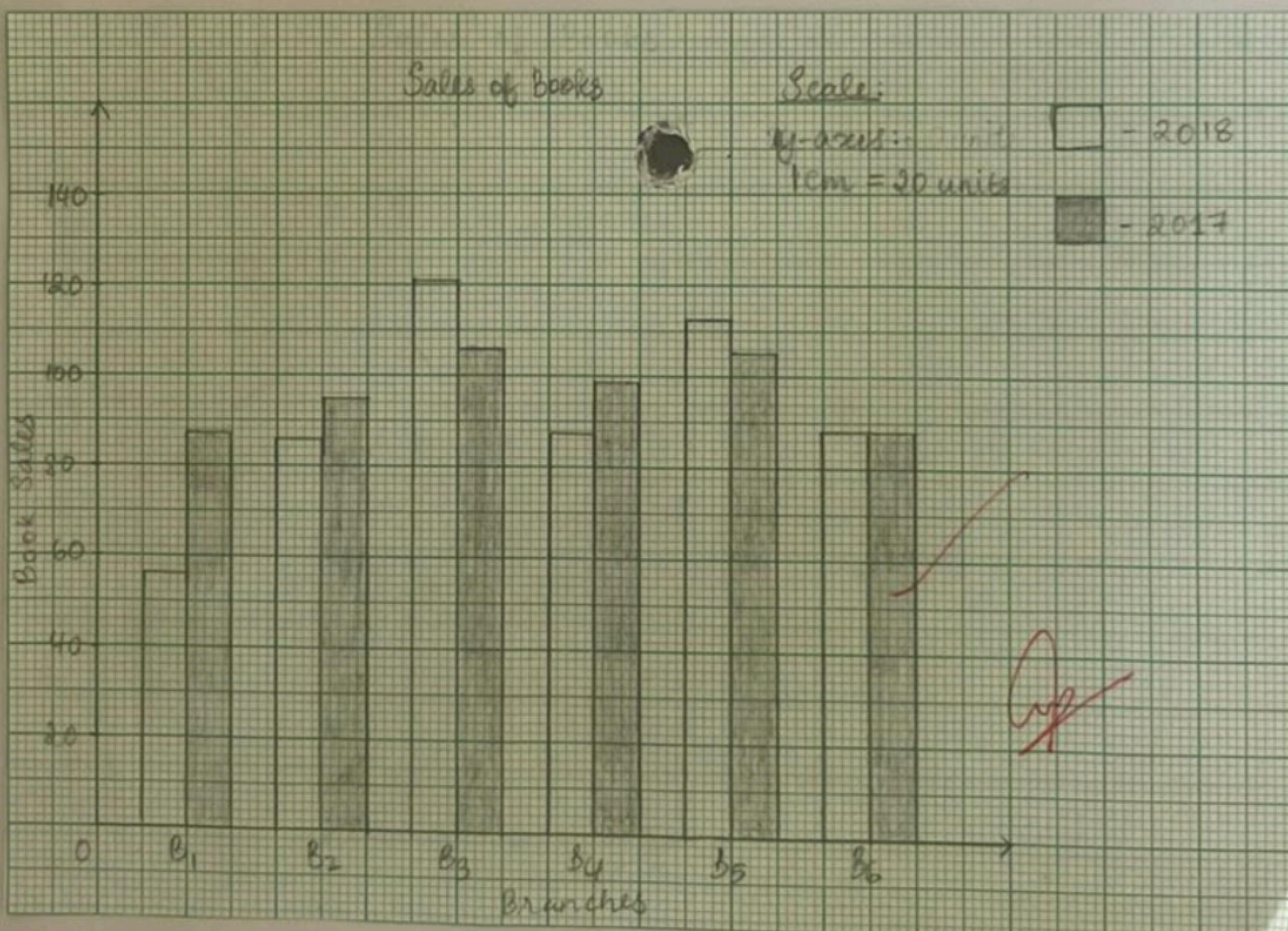
PRACTICAL SHEET - 1

DIAGRAMS AND GRAPHS

1. Sales of books (in thousand numbers) from six branches - B_1, B_2, B_3, B_4, B_5 and B_6 of a publishing company in 2018 and 2017 are given below. Draw a multiple bar diagram for the same. Take the branches as x-axis.

Branches	B_1	B_2	B_3	B_4	B_5	B_6
2018	56	86	121	87	113	88
2017	87	95	106	99	105	88

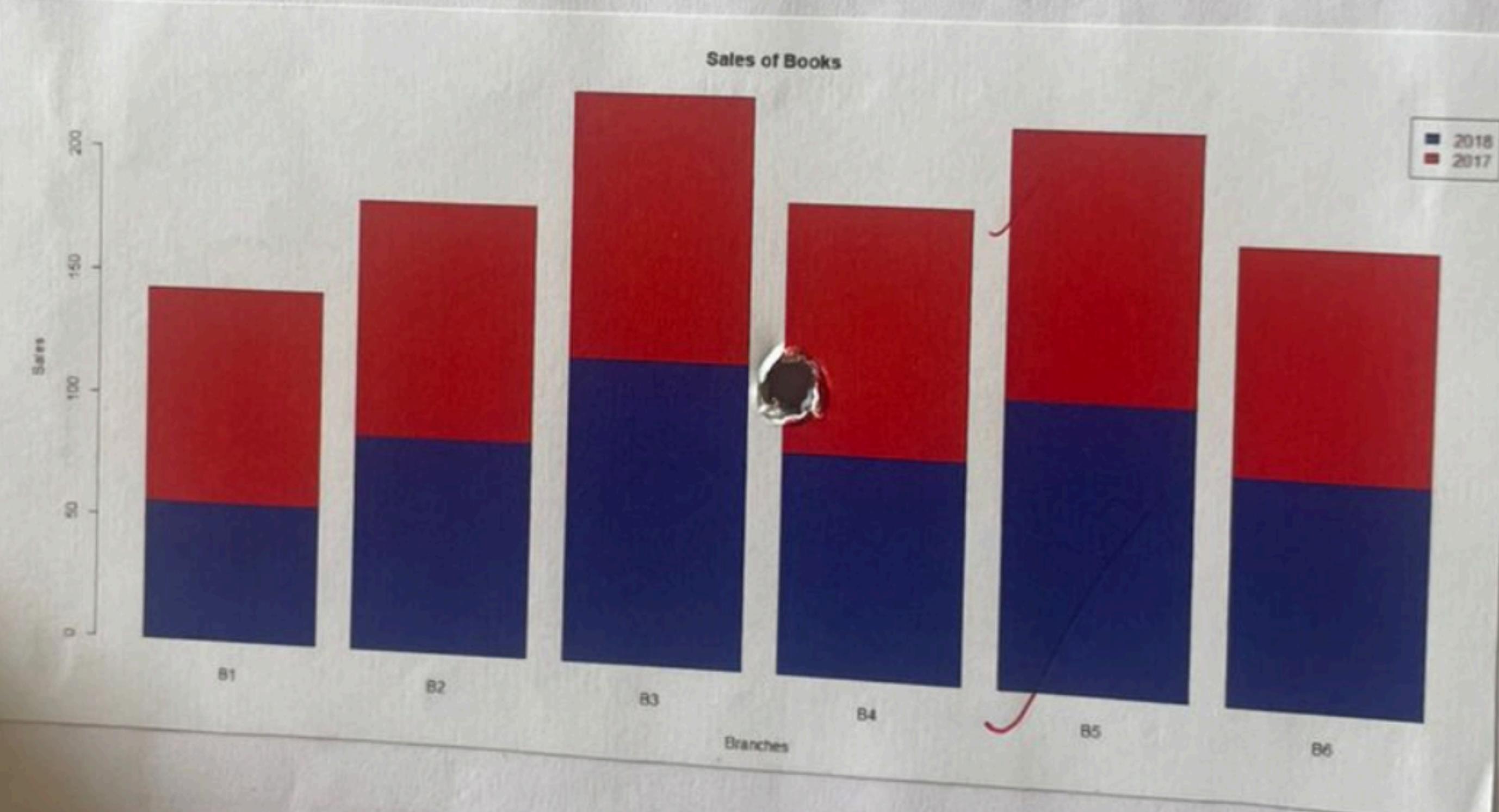
Solution:



Program

```
branches <- c("B1", "B2", "B3", "B4", "B5", "B6"); branches  
years <- c("2018", "2017"); years  
values <- matrix(c(56, 86, 121, 87, 113, 88, 87, 95, 106, 99, 105, 88), byrow=TRUE,  
nrow=2); values  
barplot(values, names.arg = branches, xlab = "Branches", ylab = "Sales",  
main = "Sales of Books", beside = FALSE, col = c("blue", "red"))  
legend("topright", years, cex = 1.0, fill = c("blue", "red"))
```

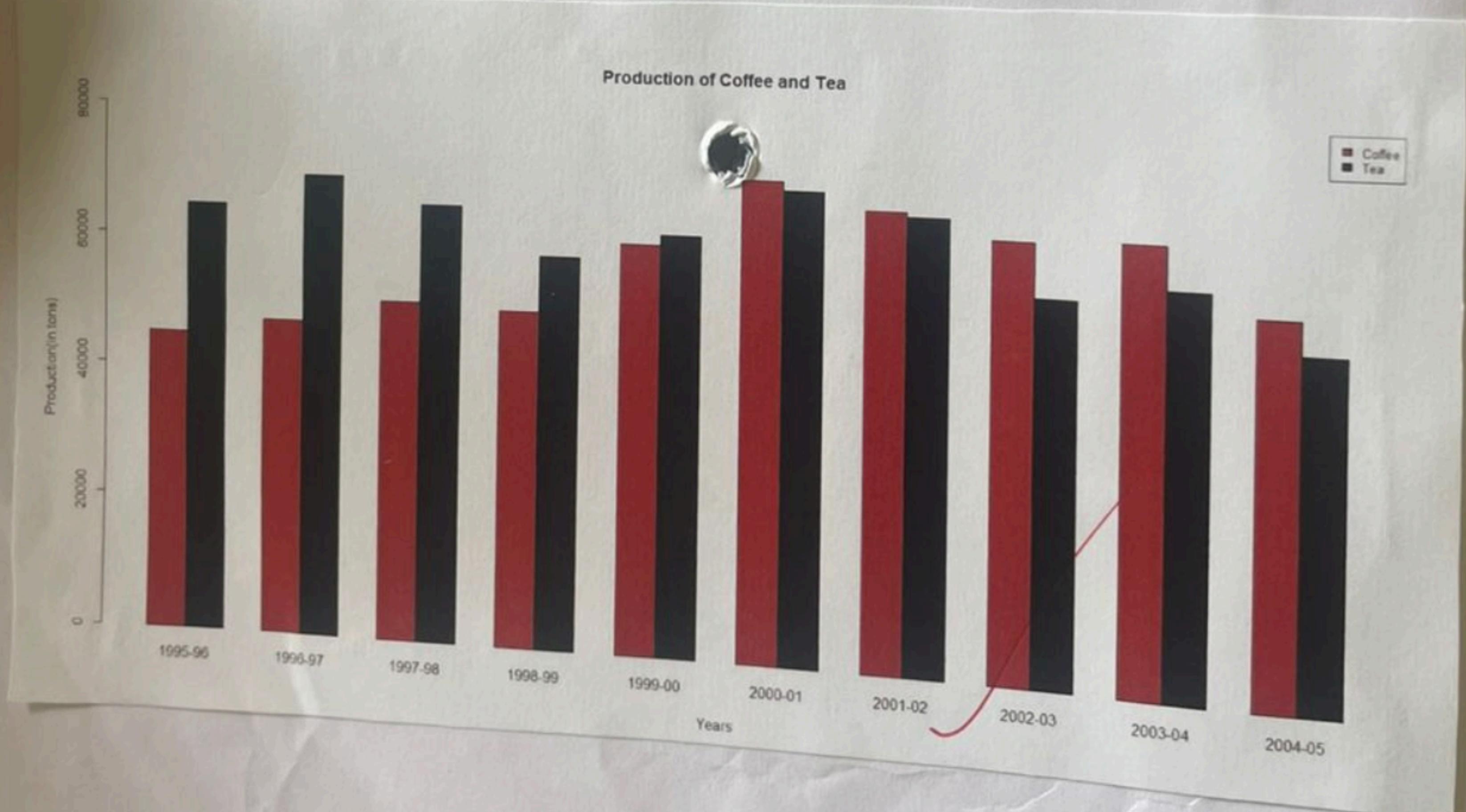
Output



Program

```
years <- c("1995-96", "1996-97", "1997-98", "1998-99", "1999-00", "2000-01",
         "2001-02", "2002-03", "2003-04", "2004-05"); years
produce <- c("Coffee", "Tea"); produce
values <- matrix(c(45000, 47320, 50659, 49886, 60470, 70550, 66690, 63322, 63850,
                  54300, 64802, 69319, 65225, 58126, 61955, 69132, 66090, 55348, 57553,
                  49503), byrow=TRUE, nrow=2); values
barplot(values, names.arg = years, beside=TRUE, main = "Production of Coffee and
        Tea", xlab = "Years", ylab = "Production(in tons)", col = c("brown", "black"))
legend("topright", produce, cex = 0.8, fill = c("brown", "black"))
```

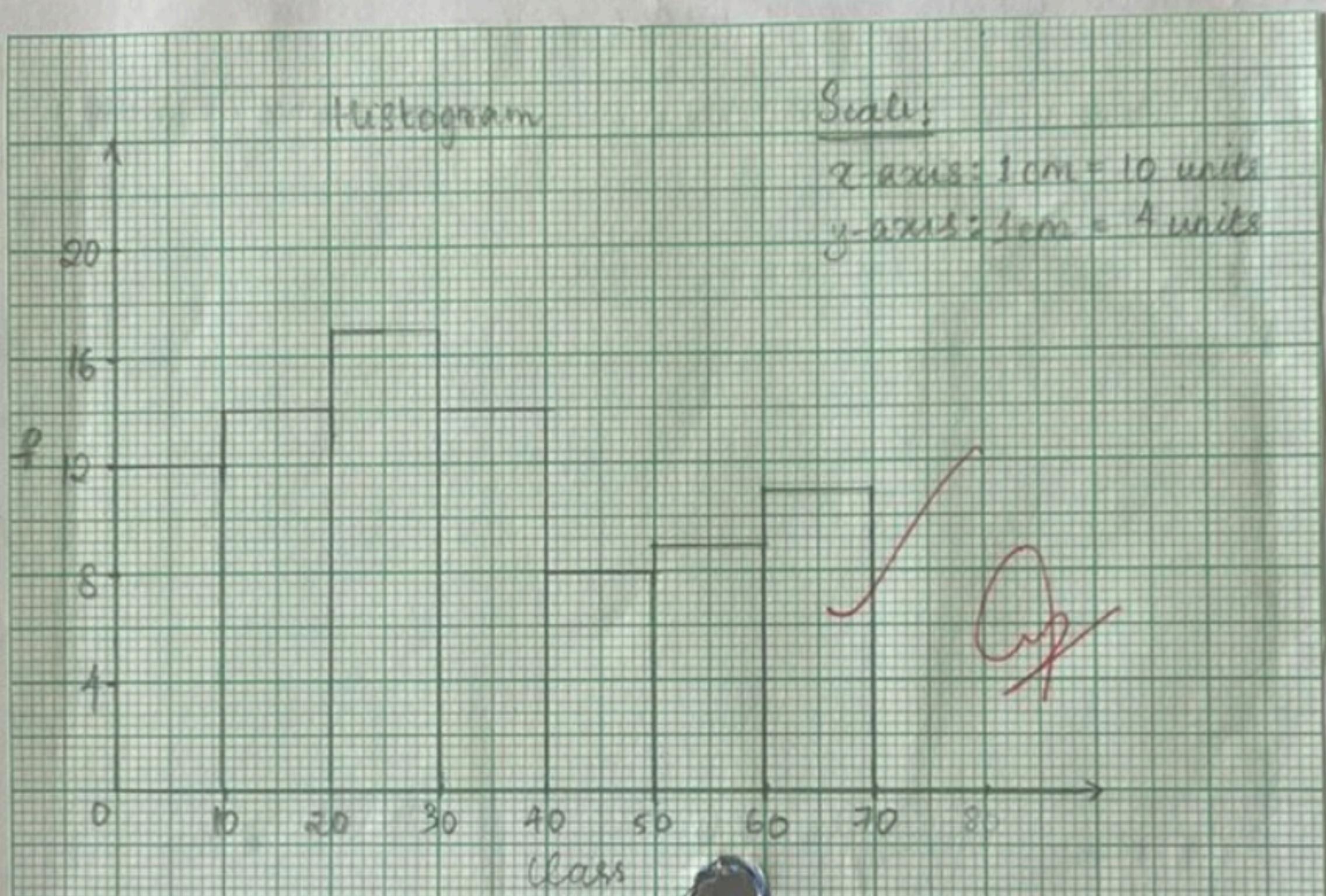
Output



3. Construct histogram.

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70
f	12	14	17	14	8	9	11

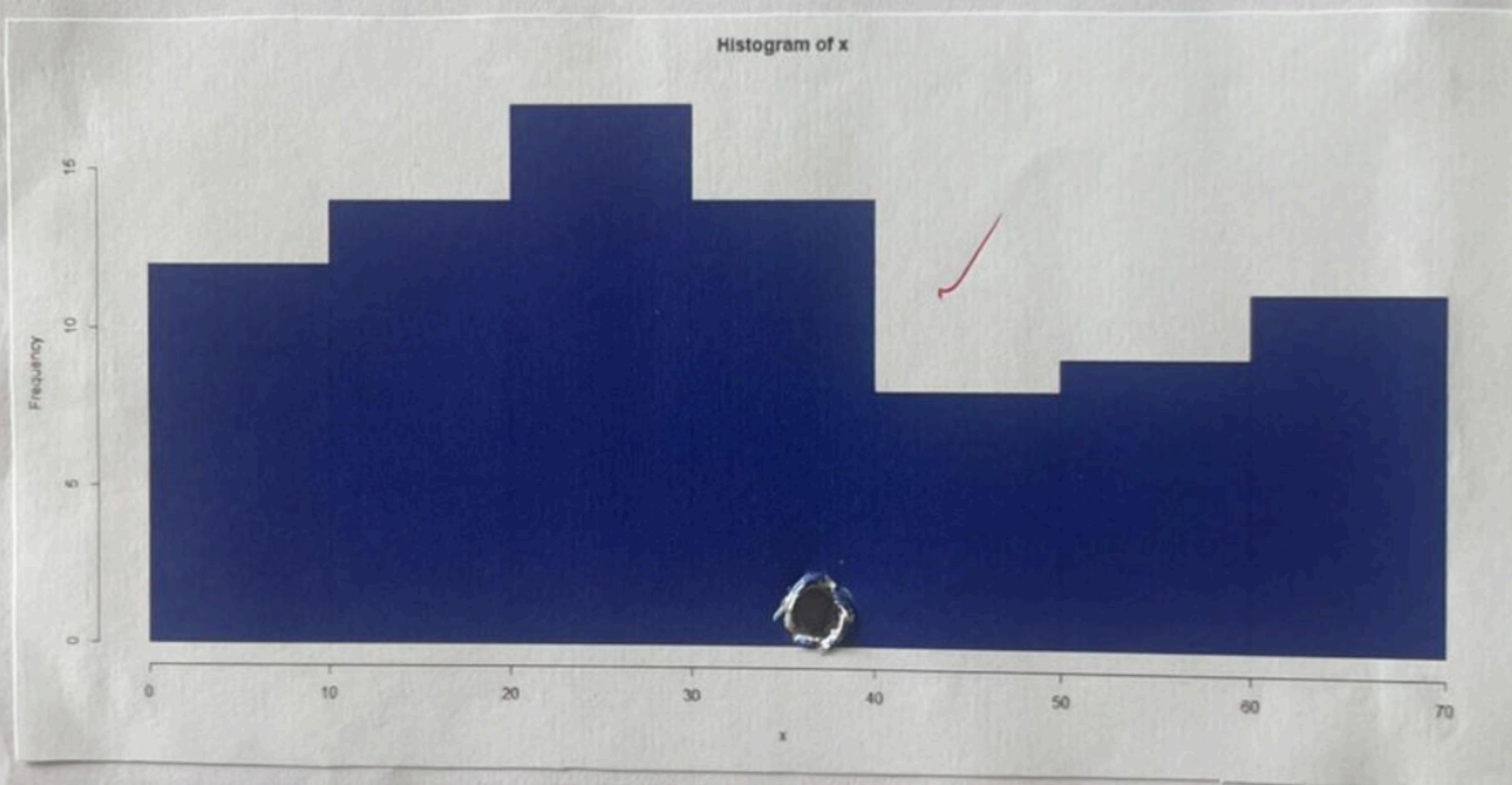
Solution:



Program

```
midx <- seq(from=5, to=65, by=10); midx  
f <- c(12, 14, 17, 14, 8, 9, 11); f  
x <- rep(midx, f); x  
hist(x, breaks = seq(from=0, to=70, by=10), freq=TRUE, col = "blue", border="black")
```

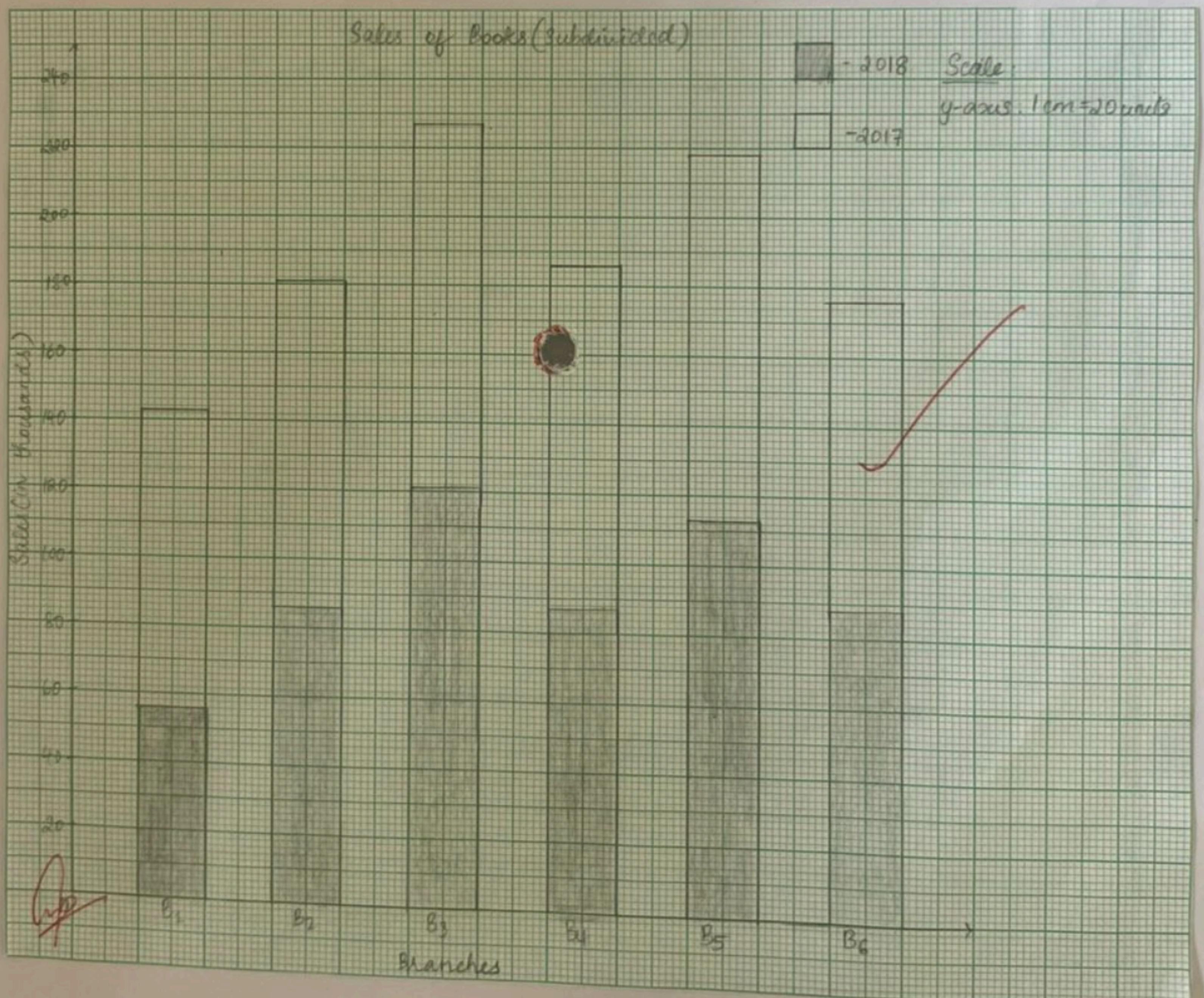
Output



2. Sales of books (in thousand numbers) from six branches - B_1, B_2, B_3, B_4, B_5 and B_6 of a publishing company in 2018 and 2017 are given below. Draw a subdivided bar diagram for the same. Take the branches as x-axis.

Branches	B_1	B_2	B_3	B_4	B_5	B_6
2018	56	86	121	87	113	88
2017	87	95	106	99	105	88

Solution:



5. Draw stem and leaf chart.

57 62 61 60 54 48 78 53 55 56 38 55 60 50 76 55 64
58 48 59 48 54 30 63 70 54 56 33 59 51

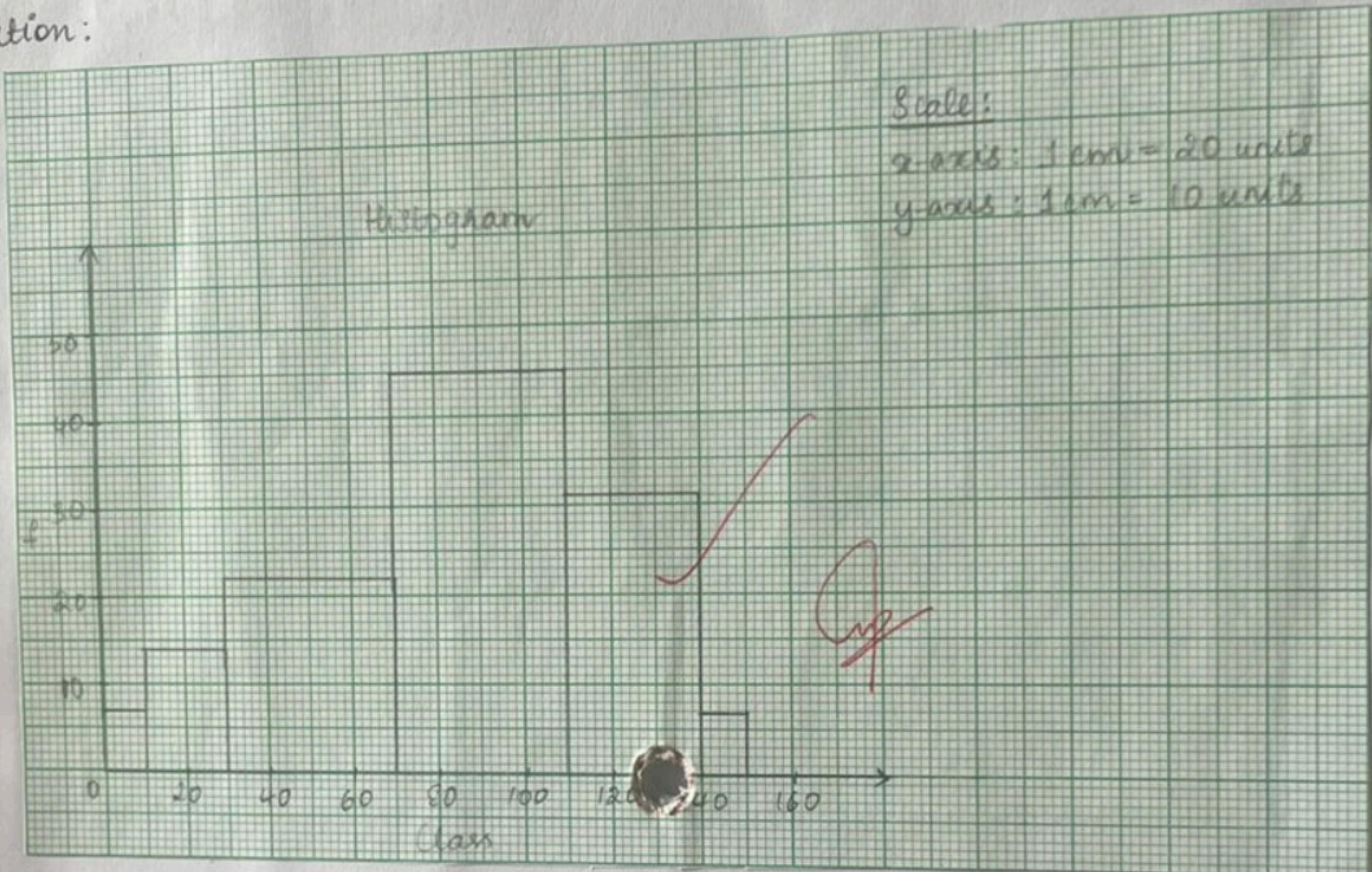
Solution:

Stem	Leaf
3	0 3 8
4	8 8 8
5	0 1 3 4 4 4 5 5 5 6 6 7 8 9 9
6	0 0 1 2 3 4
7	0 6 8

b. Draw histogram for the data.

class	0-10	10-30	30-70	70-110	110-140	140-150
f	7	14	22	45	31	7

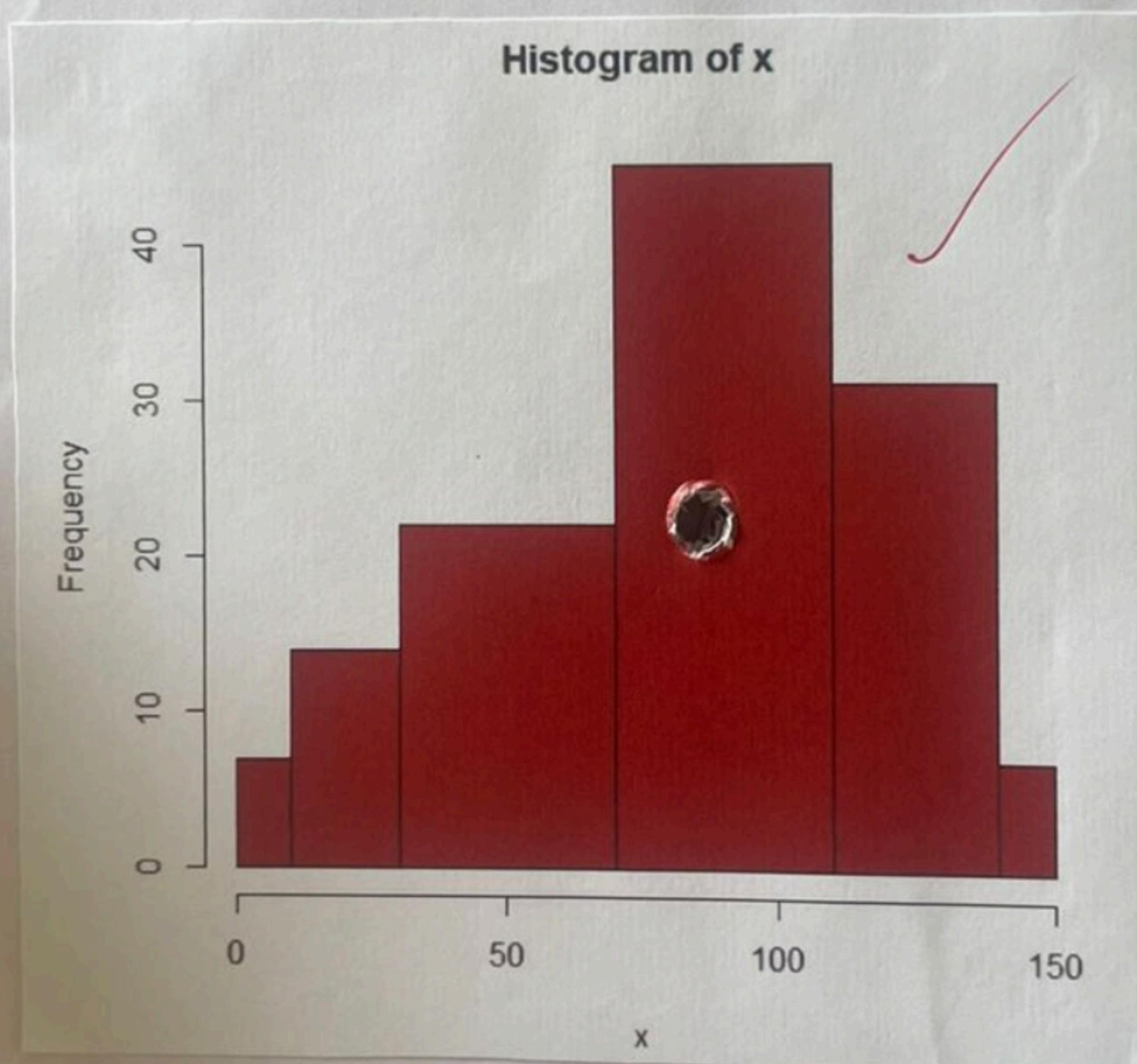
Solution:



Program

```
midx <- c(5, 20, 50, 90, 125, 145); midx  
f <- c(7, 14, 22, 45, 31, 7); f  
x <- rep(midx, f); x  
hist(x, breaks = c(0, 10, 30, 70, 110, 140, 150), freq = TRUE, col = "brown",  
border = "black")
```

Output



Program

x <- c(57, 62, 61, 60, 54, 48, 78, 53, 55, 56, 38, 55, 60, 50, 76, 55, 64, 58, 48, 59, 48, 54,
30, 63, 70, 54, 56, 33, 59, 51); x
stem(x)

Output

The decimal point is 1 digit(s) to the right of the 1.

3 | 03

3 | 8

4 |

4 | 888

5 | 013444

5 | 555667899

6 | 001234

6 |

7 | 0

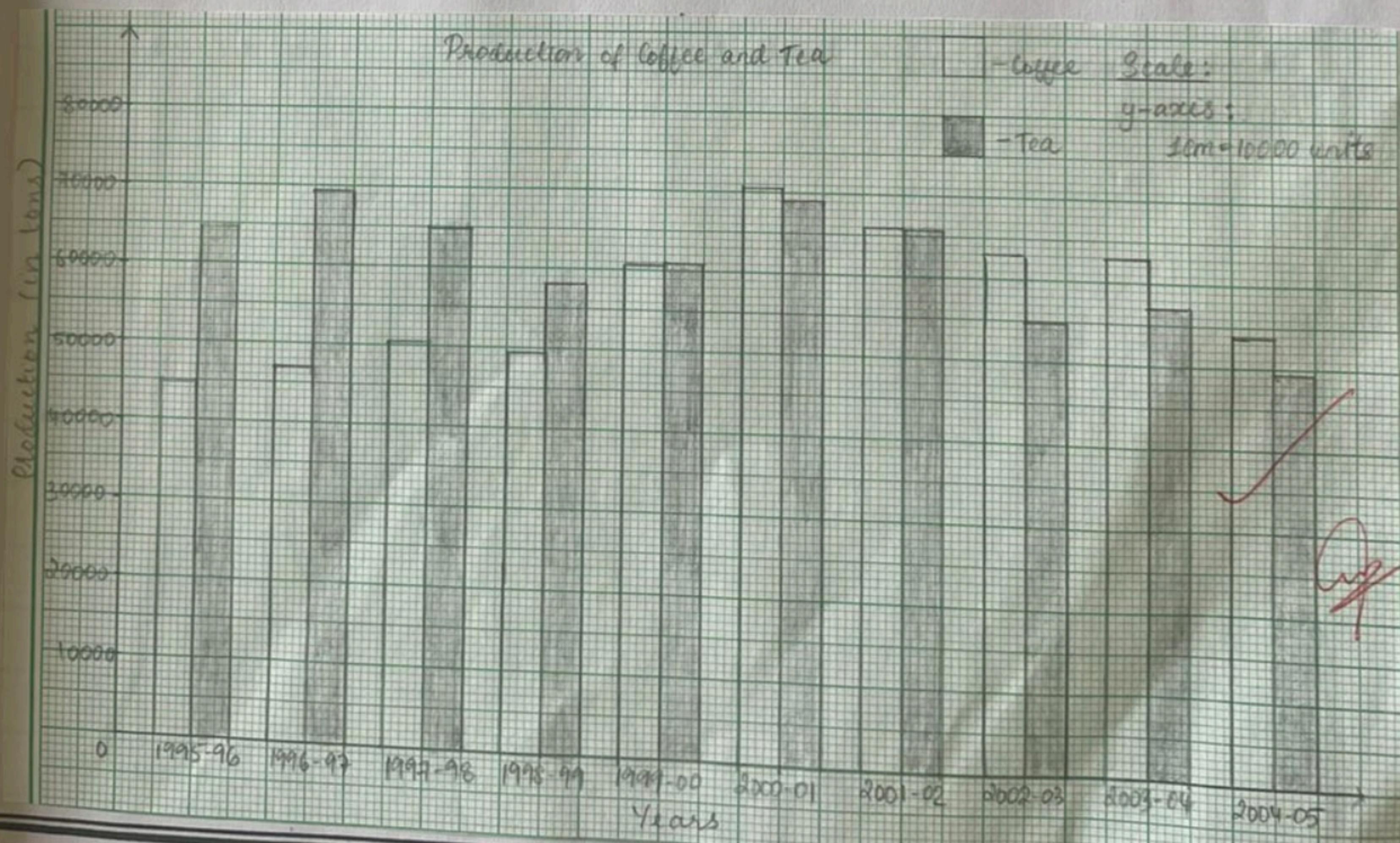
7 | 68

35 9

4. The following data gives the production (in tons) of coffee and tea in Kerala. Represent the data by a suitable diagram and check which of the two is more consistent.

Year	Production of Coffee	Production of Tea
1995-96	45000	64802
1996-97	47320	69319
1997-98	50659	65225
1998-99	49886	58126
1999-00	60470	61955
2000-01	70550	69132
2001-02	66690	66090
2002-03	63322	55348
2003-04	63850	57553
2004-05	54300	49503

Solution:



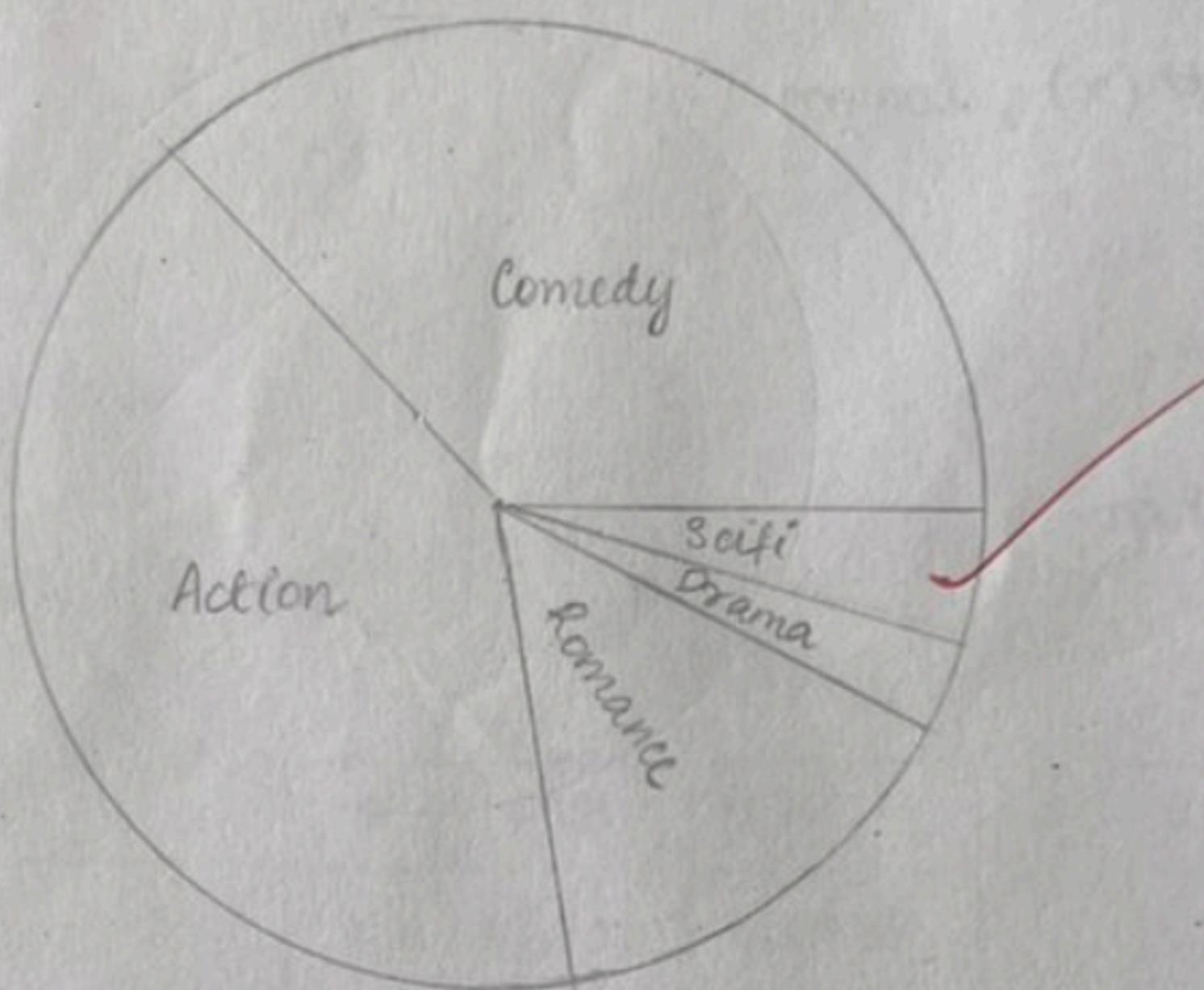
3XBHD00035

H

8. Construct pie diagrams for the data.

Comedy	Action	Romance	Drama	SciFi
6526	7108	2568	560	763

Solution:

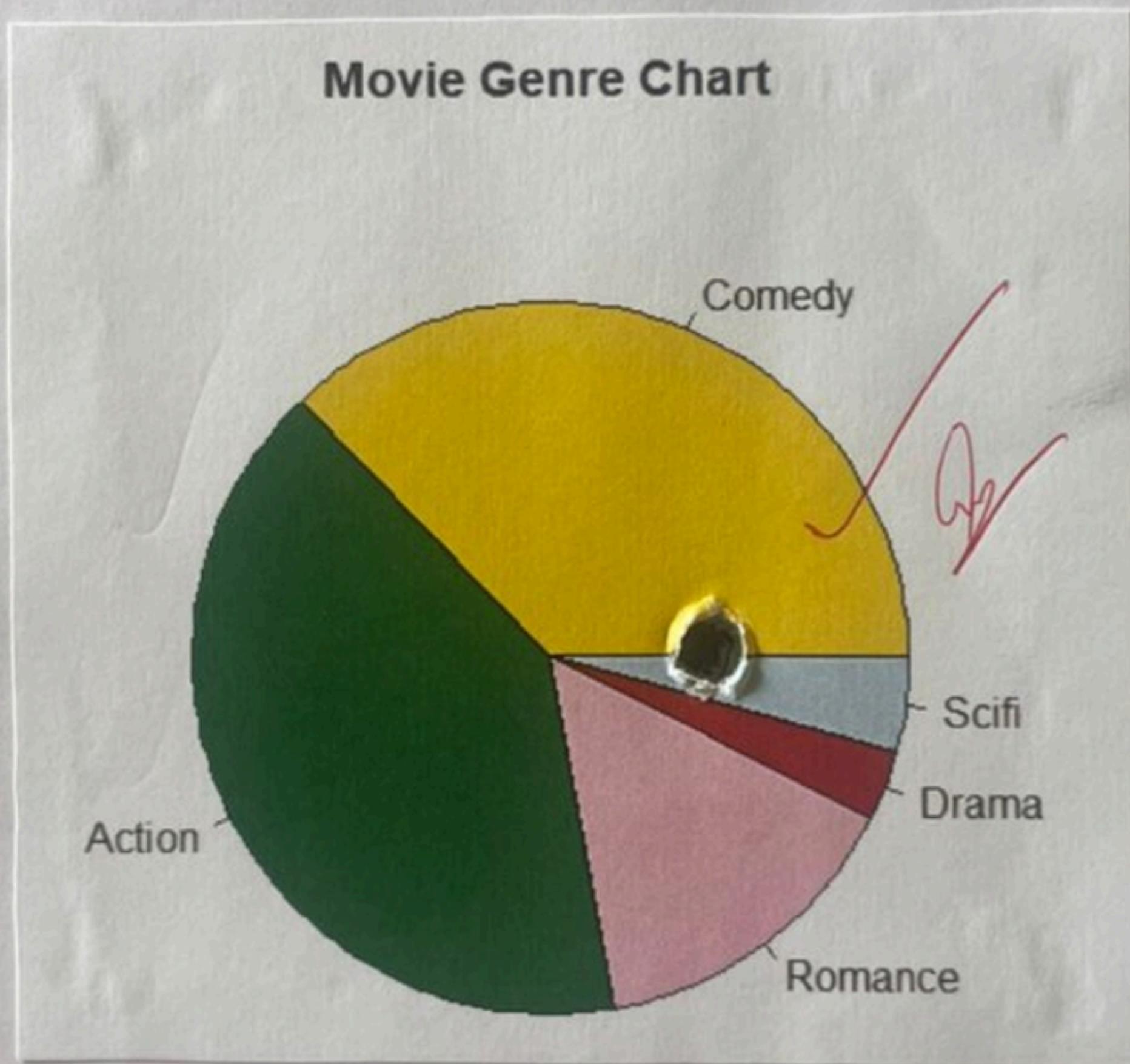


Q

Program

```
data <- c(6526, 7108, 2568, 560, 763); data  
names(data) <- c("Comedy", "Action", "Romance", "Drama", "SciFi"); names(data)  
pie(data, main = "Movie Genre chart", col = c("gold", "darkgreen", "pink",  
"brown", "lightblue"))
```

Output



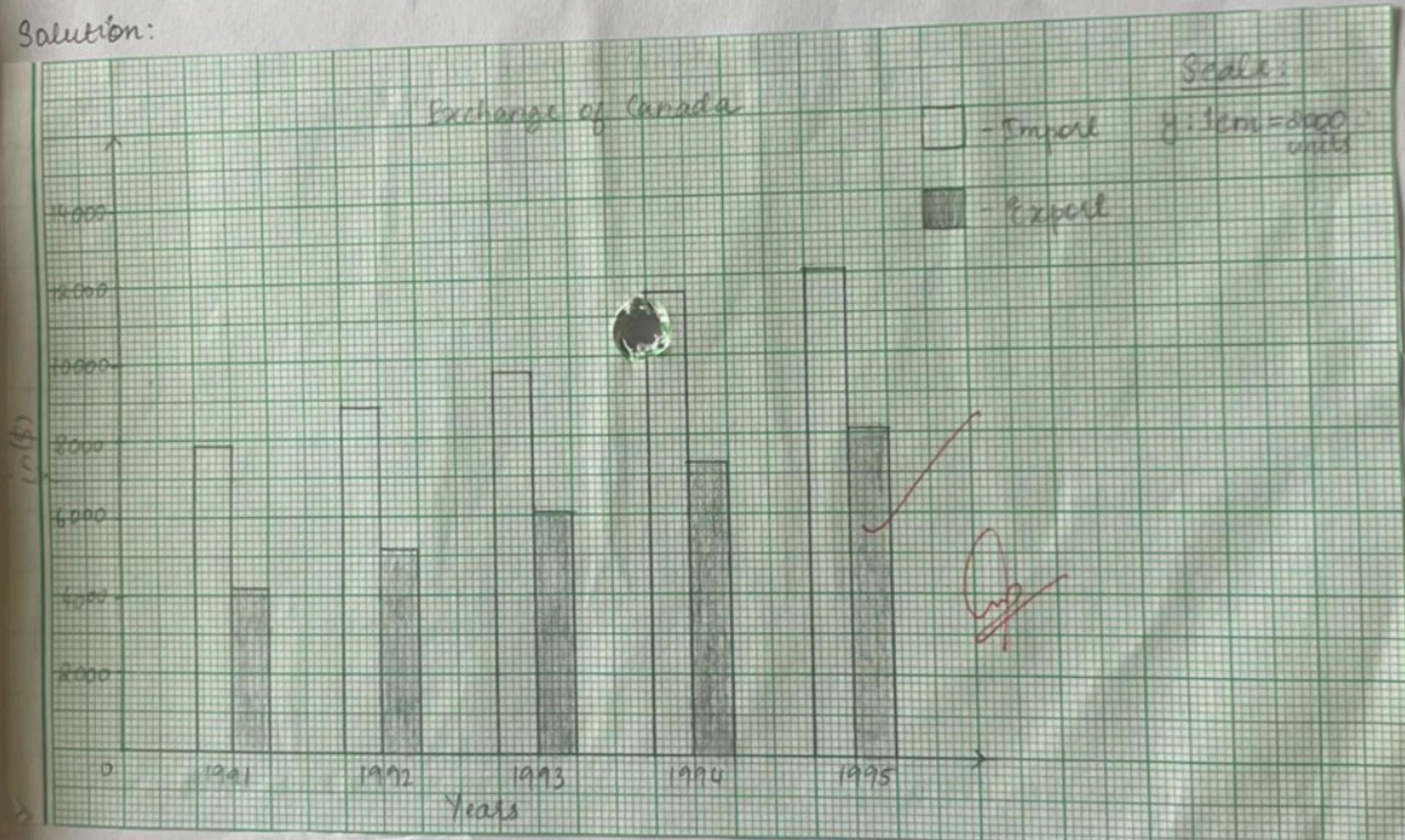
3XBHD

15

7. Draw a multiple bar chart to represent the import and export of Canada (values in \$) for the years 1991 to 1995.

Years	Import	Export
1991	7930	4260
1992	8850	5225
1993	9780	6125
1994	11720	7340
1995	12150	8145

Solution:



Program

```
years <- c("1991", "1992", "1993", "1994", "1995"); years  
ex <- c("Import", "Export"); ex  
values <- matrix(c(7930, 8850, 9780, 11720, 12150, 4260, 5225, 6125, 7340, 8145),  
byrow = TRUE, nrow = 2); values  
barplot(values, names.arg = years, main = "Import and Export of Canada  
(1991-95)", xlab = "Years", ylab = "Value (in $)", beside = TRUE,  
ylim = c(0, 12000), col = c("green", "red"))  
legend("topright", ex, cex = 0.8, fill = c("green", "red"))
```

Output

