Quiz 1.2C   AP Statistics   Name:

1. Hallux abducto valgus (call it HAV) is a deformation of the big toe that is not common among young people and often requires surgery. Doctors used X-rays to measure the angle (in degrees) of deformity in 38 consecutive patients under the age of 21 who came to a medical center for surgery to correct HAV. The higher the angle measure the more severe the deformity. Here are the data.

```
13 14 16 16 17 18 18 20 20 20 21 21 21 21 22 23 25 25 25
25 26 26 26 26 28 28 28 30 30 30 31 32 32 32 34 38 38 50
```

(a) Make a histogram of these data. Choose an appropriate bin width and scale, and label each axis.

(b) Write a brief discussion of the distribution of the angle of deformity among young patients needing surgery for this condition.
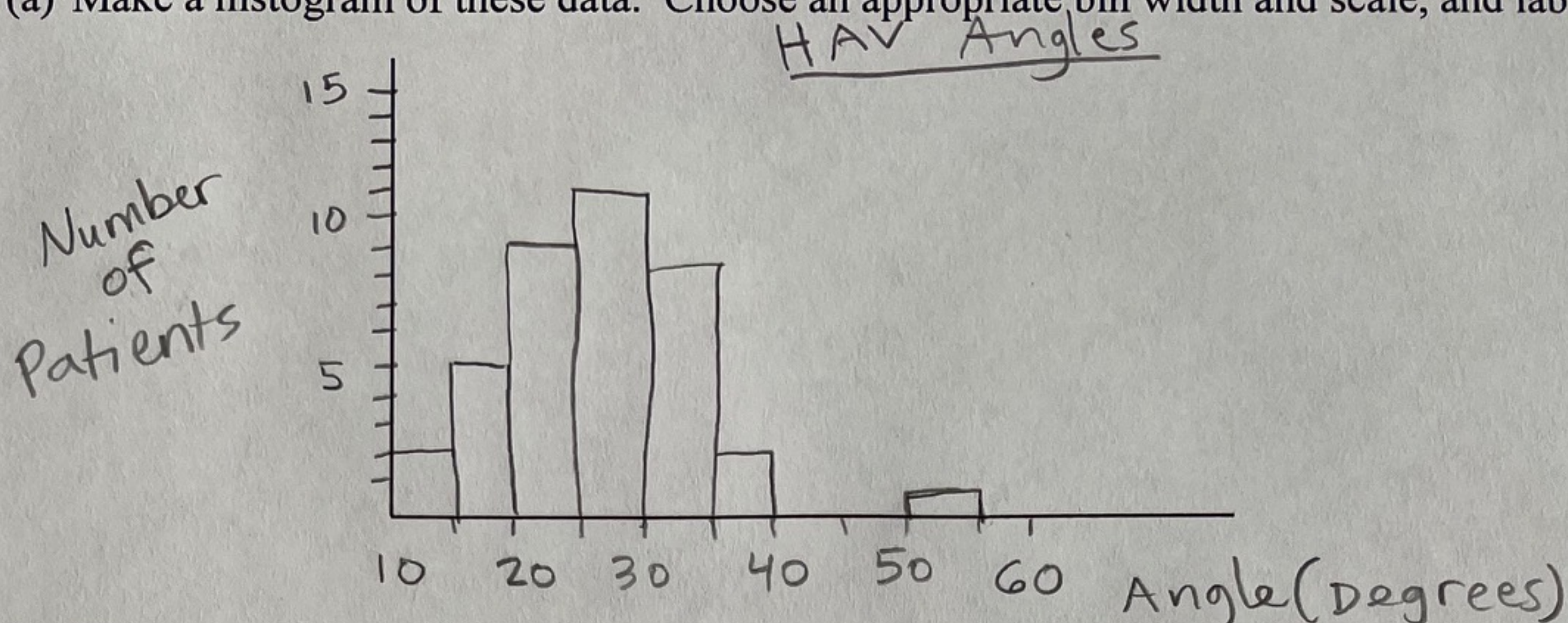
2. Below are the resting heart rates of 26 ninth-grade biology students.

| 61 | 78 | 77 | 81 | 48 | 75 | 70 | 77 | 70 | 76 | 86 | 55 | 65 |
| 60 | 63 | 79 | 62 | 71 | 72 | 74 | 74 | 64 | 66 | 71 | 66 | 68 |

Make a stemplot of these data <u>with split stems</u>.

(a) Make a histogram of these data. Choose an appropriate bin width and scale, and label each axis.

HAV Angles

Number of Patients (y-axis, marked 5, 10, 15)
Angle (Degrees) (x-axis: 10 20 30 40 50 60)

(b) Write a brief discussion of the distribution of the angle of deformity among young patients needing surgery for this condition.

C: The median degree of patients is 25 ($\bar{x} = 25.4°$).

S: Because the mean of 25.4° is greater than the median of 25, the measures are skewed right.

S: The IQR of the degrees is 10 ($S_x = 7.5°$).

U: Using The Outlier Rule, there was one outlier, a measure of 50°.

Low $< 20 - 1.5(10) = 5$

High $> 30 + 1.5(10) = 45$

2. Make a stemplot of these data with split stems.

BPM for 9th Graders

```
4 | 8
5 |
5 | 5
6 | 0 1 2 3 4
6 | 5 6 6 8
7 | 0 0 1 1 2 4 4
7 | 5 6 7 7 8 9
8 | 1
8 | 6
```

Key: 5|5 = 55 bpm

3. The dotplots below show the total family income of randomly-chosen individuals from Indiana (38