Name_____   Period_____   Date_____

Ages of Executives   The ages of a sample of 100 executives are listed.

```
27  28  31 32 32 33 35 36 36 36 36 37 38 39 39 40 40
40  41  41 41 42 42 42 42 42 42 42 43 43 43 44 44 45
45  46  47 47 47 47 47 48 48 48 48 48 49 49 49 49 49
49  50  50 51 51 51 51 51 51 52 52 52 53 53 54 54 54
54  54  54 54 54 55 56 56 56 57 57 57 59 59 59 60 60
60  61  61 61 62 62 63 63 63 63 64 65 67 68 74 82
```
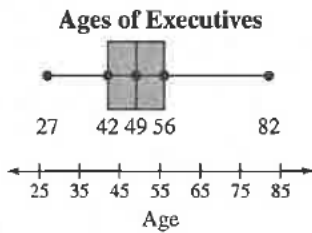
(a) Find the five-number summary.

(b) Draw a box-and-whisker plot that represents the data set.

(c) Interpret the results in the context of the data.

(d) On the basis of this sample, at what age would you expect to be an executive? Explain your reasoning.

(e) Which age groups, if any, can be considered unusual? Explain your reasoning.

Solution

```
27 28 31 32 32 33 35 36 36 36 36 37 38 39 39 40 40 40 41 41
41 42 42 42 42 42 42 43 43 43 44 44 45 45 46 47 47 47 47 47
48 48 48 48 48│49 49 49 49 49 49 50 50 51 51 51 51 51 51 52
52 52 53 53 54│54 54 54 54 54│54 54 55 56 56 56 57 57 57 59
59 59 60 60 60│61 61 61 62 62│63 63 63 63 64│65 67 68 74 82
```

$$Q_1 \qquad\qquad Q_2 \qquad\qquad Q_3$$

Min = 27, $Q_1 = 42$, $Q_2 = 49$, $Q_3 = 56$, Max = 82

b.

Ages of Executives


```
27      42 49 56        82

  25  35  45  55  65  75  85
              Age
```

c. Half of the executives are between 42 and 56 years old.

d. About 49 years old because half of the executives are older and half are younger.

e. The age groups 20-29, 70-79, and 80-89 would all be considered unusual because they are more than two standard deviations from the mean.

Introduction To Statistics Unit 2 February ECR Grading Rubric

Grading Criteria	Points
One point per correct response in the five-number summary	**+5**
Correct response to **b)**	**+1**
Correct response to **c)**	**+1**
Correct response to **d)**	**+1**
Correct response to **e)**	**+1**

Total Points	0	1-2	3-4	5-7	8-9
Genesis Grade	59	69	79	89	100