Name: _____ Date: _____ Period: _____

Graphing Skill #3: Scaling Axes

There are a few important steps involved in correctly scaling an axis:

- STEP 1: Find the range for the variable
  - Range = Largest Value - Smallest Value
- STEP 2: Divide the range by the number of intervals you want (not too many or too few). We don't want all of the data smooshed in only part of the graph; spread it out.
  - After dividing, we may need to round *up* to get a number that is easy to count by. (It is easier to count by 2s instead of 1.9s)
- STEP 3: Use the rounded number to mark off intervals along the axis.
  - The interval must be the same amount each time (count up by the same number).

STEP 1: What is the range of my data? Find the range of the data for each column below.

EX.

Mass (g)
5
11
14
19
26
30
40

Largest #: 40

Smallest #: 5

Range: 35-5 = 35

A)

Students
100
99
88
70
72
64
55

Largest #: _____

Smallest #: _____

Range: _____

B)

Distance (cm)
3
5
6
7
9
10
12

Largest #: _____

Smallest #: _____

Range: _____

C)

Time (s)
0.22
0.51
0.78
1.01
1.23
1.60
1.74

Largest #: _____

Smallest #: _____

Range: _____

STEP 2: What number do I count by? Assume that our graph has 10 intervals (places to put numbers). If needed, round up to get to a good counting number.

A)
Range = 35

# of intervals = 10

$$\frac{\text{Range}}{\text{Intervals}} = \frac{35}{10} = 3.5$$

Round to Count = 4

A)
Range = _____

# of intervals = _____

B)
Range = _____

# of intervals = _____

C)
Range = _____

# of intervals = _____

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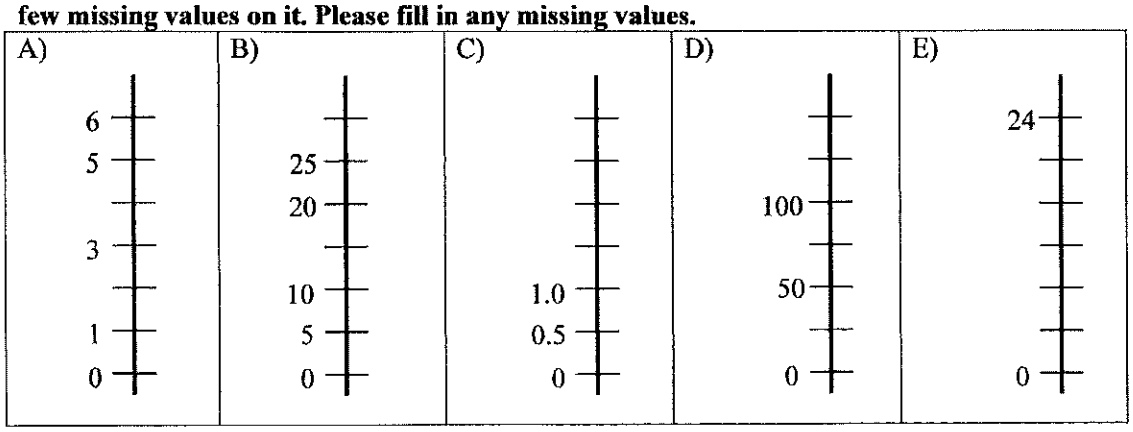
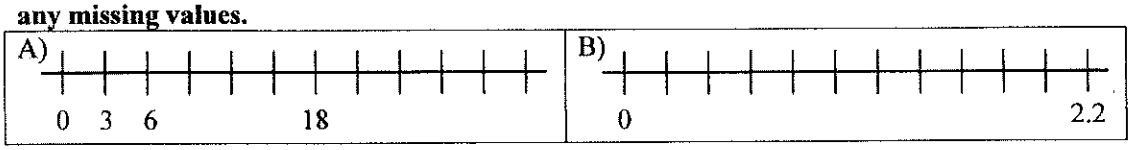
STEP 3: What does my scale look like? Each of the scales for the *dependent* variables has a few missing values on it. Please fill in any missing values.



Each of the scales for the *independent* variables has a few missing values on it. Please fill in any missing values.



Putting it all together: Please create appropriate scaling for each axis.

Distance (m)	Time (s)
10.3	1.5
20.2	2.9
29.8	4.3
40.4	5.8
49.1	7.0
60.9	8.7
70.2	10.0
80.1	11.4
90.6	12.9

Time vs. Distance