Crossover with Formulae, and Data Analysis
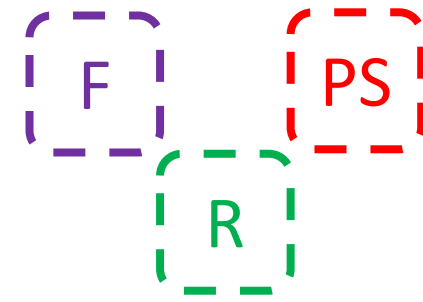
F   PS   R

Formulae you will need:

$$speed = \frac{distance}{time} \qquad T_c = \frac{5}{9}(T_F - 32)$$

Date	Temperature in Birmingham (°C)	Temperature in New York (°F)
06/08/18	27	91.4
07/08/18	27	87.8
08/08/18	21	89.6
09/08/18	20	96.8
10/08/18	16	86

1. When was the hottest day for Birmingham?
2. When was the coldest day for New York?
3. What is the difference between the mean temperature for Birmingham and New York?
4. By calculating the, mean, mode, median and range of both cities write a paragraph making a comparison between them.
5. Which of the following graphs would best show the data collected between the two cities:
   - Pie Chart
   - Pictogram
   - Line Graph
   - Bar Chart
   Draw the appropriate graph

Eleni Mountney
mentor4mathsuk@gmail.com

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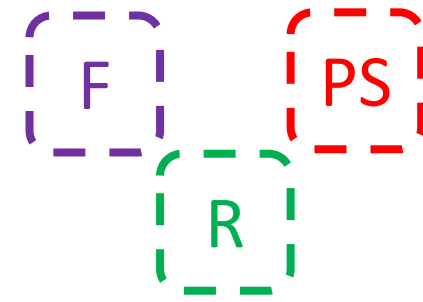
Laura designs a survey to find the average distance and time taken for employees to travel to work by car. She takes a small sample of 10 people and records the following data

A. Avg Speed : 30mph Time Taken: 20 minutes
B. Avg Speed : 30mph Distance : 6 miles
C. Distance : 7.5 miles Time Taken : 25 minutes
D. Avg Speed: 40mph   Time Taken: 40 minutes
E. Avg Speed: 30mph   Time Taken: 15 minutes
F. Distance: 3 miles   Time Taken: 10 minutes
G. Distance: 5.5 miles   Time Taken: 27 minutes
H. Avg Speed: 28mph   Distance: 6 miles
I. Distance: 8 miles   Time Taken: 42 minutes
J. Avg Speed: 30mph   Time Taken: 15 minutes

6. Calculate the following:
- Mean time taken
- Median distance travelled
- Range of speed

7. Write a paragraph analysing the data that Laura collected.

8. Which of the following graphs would best show the data that Laura has collected.
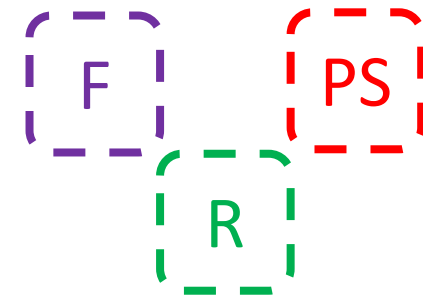- Pie Chart
- Pictogram
- Line Graph
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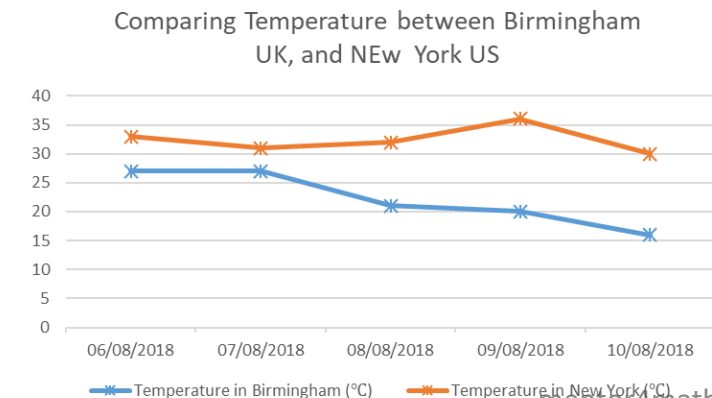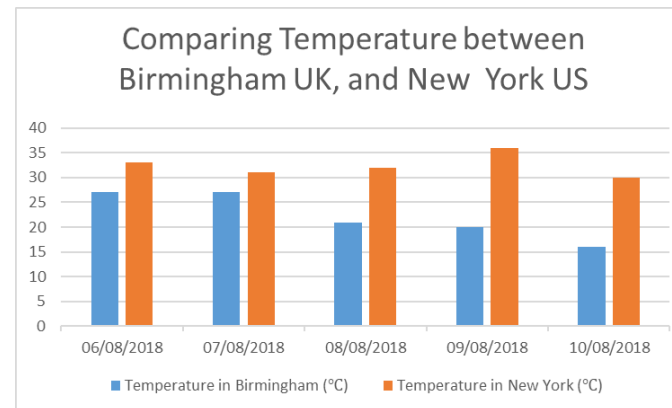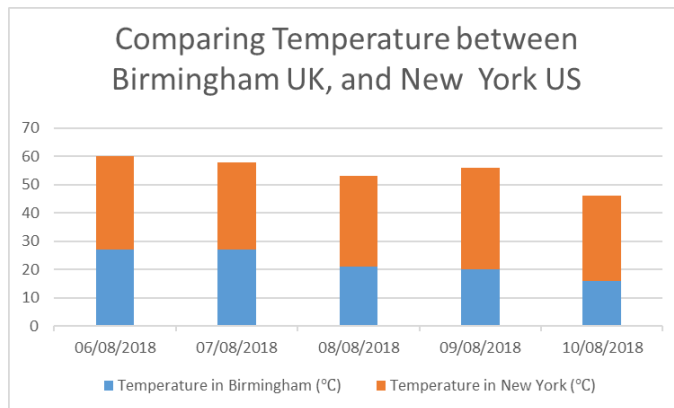Draw the appropriate graph

Formulae you will need:
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$$T_c = \frac{5}{9}(T_F - 32)$$

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1. 6th or 8th August
2. 10th August
3. 22.2℃ Birmingham, 32.4℃ New York, difference 10.2℃
4. Birmingham Mean: 22.2℃, Mode: 27℃
5. Line Graph or bar chart

Comparing Temperature between Birmingham UK, and New York US

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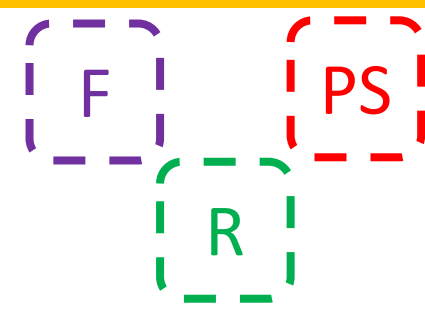
6.

- Mean time taken = 21.9 minutes
- Median distance travelled = 7.5 miles
- Range of speed = 28.6mph

7. They must make a good comparison of the following data.

Person	Speed (mph)	Distance (miles)	Time (minutes)
A	30	10	20
B	30	6	12
C	18	7.5	25
D	40	26.7	40
E	30	7.5	15
F	18	3	10
G	12.2	5.5	27
H	28	6	13
I	11.4	8	42
J	30	7.5	15

8. Bar chart would be the best to show all data on the same graph

Data to show the distance, speed and time taken to travel to work.

Legend: Speed (mph), Distance (miles), Time (minutes)

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