Author: Manishaa Senthilkumaran

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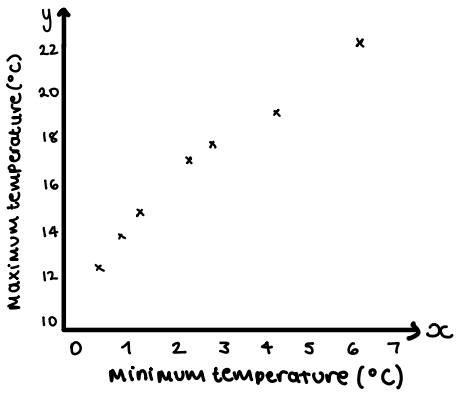
Problem Solving

Bronze

a)



b) The points appear to be close to a straight line.

c) 12°C is outside the range/data, so this would be extrapolation.

Silver

a) The data exhibits a very strong linear trend.

b) $y = 185 - 10x$

185 = the value in £1000s when the flat is right in the centre of the city.

−10 = the decrease in value for every 1km from the city centre.

c) $x = 11$

$y = 185 - 10(11)$

$y = 75$

75 is outside the range of data so it would be extrapolation

d) It is likely to be a valid data value as the value isn't realistic.

Gold

a) $y = 113 - 0.993x$

-0.993 = visibility decreases for 93.3DM for each 1% increase in humidity.

b) i) $x = 90\%$

$113 - 0.933(90) = 29.03$

90% is within the range of the data so it would be sensible.

ii) $x = 40\%$

$113 - 0.933(40) = 75.68$

The daily maximum relative humidity in the UK never falls about 60%, so it isn't valid.

c) High humidity is associated with mist and fog so it is likely that the relationship could be casual.

d) This is the regression line for y on x. To predict the humidity from the visibility, you would need the equation of the regression line for x on y.