5.1 | Foundations of Math 11

1. a) see graph paper

b) range (largest - smallest)
   Langley $17.0° - 2.2° = 14.8°$
   Windsor $22.7° - (-4.5°) = 27.2°$

   mean
   Langley $\dfrac{2.2° + 4.4° + 6.3° + 8.6° + 11.8° + 14.2° + 16.7° + 17.0° + 14.2° + 9.8° + 5.1° + 2.7°}{12} =$

   $\dfrac{113°}{12} = 9.42°$

   Windsor $\dfrac{-4.5° + (-3.2°) + 2.0° + 8.2° + 14.9° + 20.1° + 22.7° + 21.6° + 17.4° + 11.0° + 4.6° - (-1.5°)}{12} =$

   $\dfrac{113.3°}{12} = 9.44°$

   median
   Langley $2.2°, 2.7°, 4.4°, 5.1°, 6.3°, 8.6°, 9.8°, 11.8°, 14.2°, 14.2°, 16.7°, 17.0°$
   $\dfrac{8.6° + 9.8°}{2} = 9.2°$
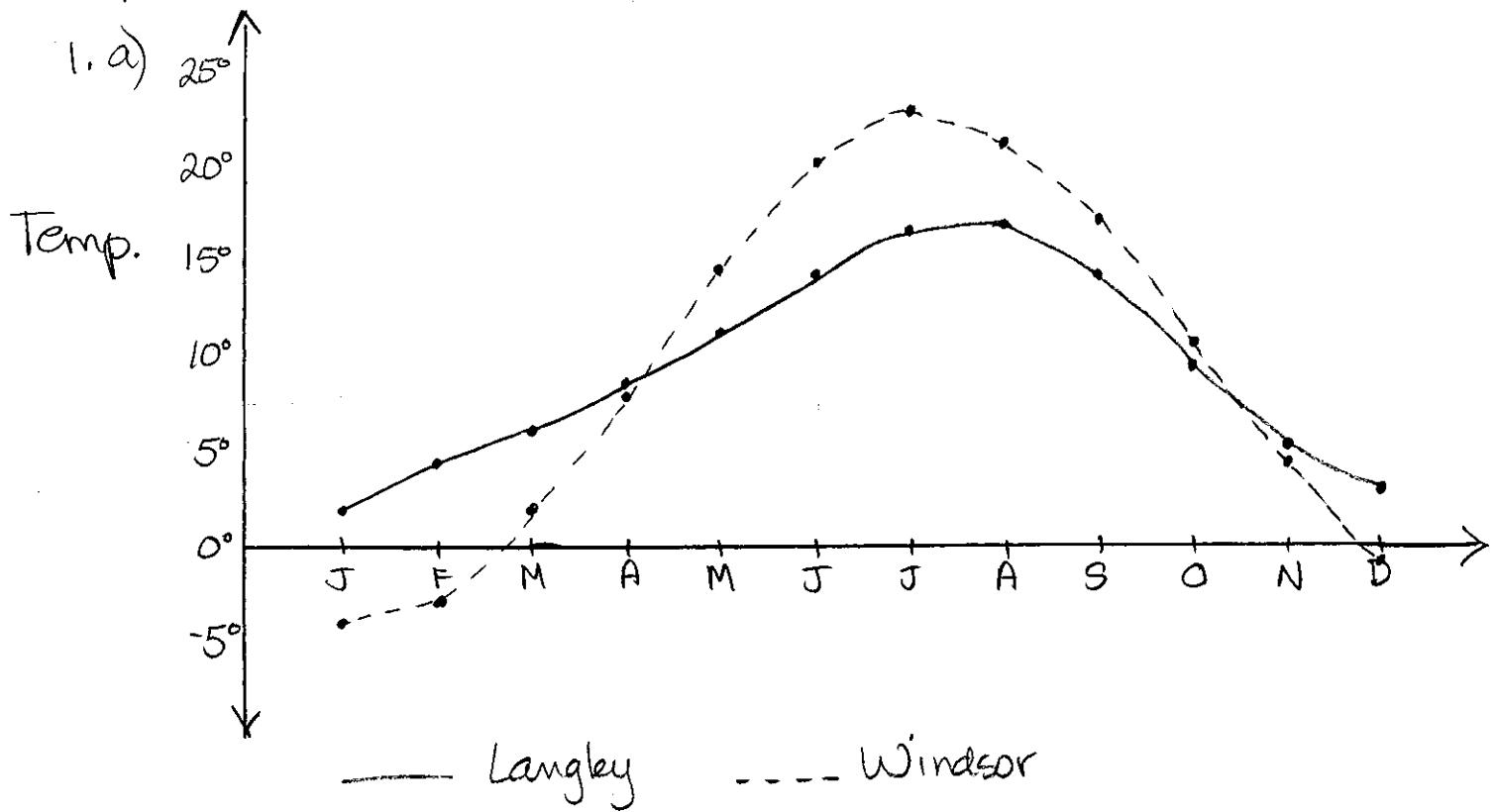
   Windsor $-4.5°, -3.2°, -1.5°, 2.0°, 4.6°, 8.2°, 11.0°, 14.9°, 17.4°, 20.1°, 21.6°, 22.7°$
   $\dfrac{8.2° + 11.0°}{2} = 9.6°$

c) The mean and mode are very similar for the two cities but the range is very different. The graph illustrates the difference in the range.

d) If you lived in one city and were going to move to the other it might be useful to know how the average temperatures compared.

1. a)

Temp.

—— Langley   ..... Windsor

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2. a) <u>Unit 1 Test</u>

mean $= \dfrac{81+80+2(79)+78+76+2(75)+74+5(73)+72+2(71)+68+67+66+64+63+61+58+57}{25}$

$\qquad = \dfrac{1780}{25} = 71.2$

median = 73   mode = 73   range = 81−57 = 24

<u>Unit 2 Test</u>

mean $= \dfrac{98+95+93+89+87+84+81+2(79)+76+5(73)+71+69+64+2(59)+57+53+44+41+37}{25}$

$\qquad = \dfrac{1780}{25} = 71.2$

median = 73   mode = 73   range = 98−37 = 61

The mean, median and mode were identical for the two tests but the range is very different.

b) They did better on test 1 because the range of that test was much smaller and everything else was equal.

c) The modes are not useful in telling which test the class performed better on.

3. a) mean

1996: $\dfrac{1797843}{11} = 163440$

1998: $\dfrac{1946310}{11} = 176937$

2000: $\dfrac{2061770}{11} = 187434$

To find the median the numbers need to be in numerical order but I don't want to write the whole number so I will write the first 3 digits and then look more closely at the numbers I need.

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3. d) cont.

median

1996: 116, 117, 144, 146, 147, <u>157</u>, 157, 181, 206, 208, 212
$157677

1998: 118, 141, 152, 161, 164, <u>167</u>, 175, 180, 218, 220, 246
$167396

2000: 137, 152, 156, 166, 170, <u>172</u>, 193, 221, 224, 228, 236
$172 503

range

1996: 212 010 - 116 443 = 95 567
1998: 246 135 - 118 519 = 127 616
2000: 236 617 - 137 665 = 98 952

The mean increased for each set of data. The median did the same. The range varied and was not too close to the mean.

b) If you were planning to move you might want to compare housing prices and values.