Name: _____   Date: _____
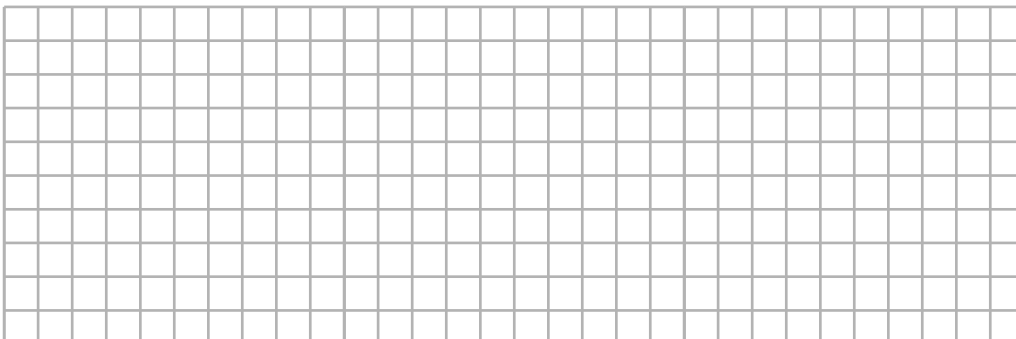
What do we remember about the normal distribution?

Example The following is a set of class marks on a pop quiz out of 15:

2	4	5	5	6	6	7	7	7	7	8	8	8	8	8
8	9	9	9	10	10	11	11	11	11	12	12	13	13	13

1. Calculate the mean and median of the data set.

2. The standard deviation of the data set is 2.8. What does this tell us?

3. Create a frequency histogram for this data. Is the data approximately normal?

Example Caitlin plays in her school jazz band. Band members practise an average of 6.5 hours per week with a standard deviation of 4.2 hours. Caitlin practises an average of 22 hours per week. How could you estimate the percent of band members that practise, on average, more than Caitlin?

Example James got a mark of 70% on a Math unit test where the class mean was 60% and the standard deviation was 5%.   On a Chemistry test he also scored 70%. For the chemistry test, the class mean was 75% and the standard deviation was 5%. Which test did he do better on, relative to his class? Why?

Z-Score

Example Hailey and Sam belong to a running club in Vancouver and train to run the 200 m sprint. At higher altitudes run times improve. For their club, 200 m sprint times are approximately normal. The statistics for the 200 m sprint for the club are listed below:

Location	Altitude (m)	Mean (s)	Standard Deviation (s)	Hailey's Time(s)	Sam's Time (s)
Vancouver	4	25.75	0.62	24.95	25.45
Lake Louise	1661	25.57	0.60	24.77	27.24

a. In which location was Hailey's time better, when compared to the club results?

b. In which location was Sam's time better, when compared to the club results?