Practice Run

1. Sketch a normal curve with the following characteristics.

   a. $\mu = 20$
      $\sigma = 4$

   b. $\mu = 0$
      $\sigma = 1$

2. The following data is approximately normal. Use the mean and standard deviation of the data to sketch a normal curve that represents the data.

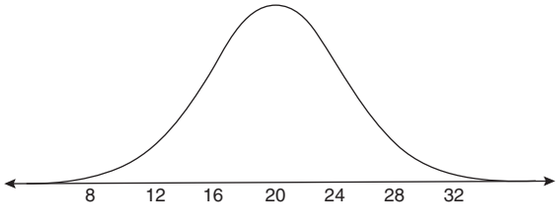
49	41	33	46	48	50	41	46	46	59
39	46	42	60	46	51	50	45	50	45
54	39	46	38	51	36	43	46	44	47
40	37	42	44	52	44	47	38	47	46

Compare your answers.

1. Sketch a normal curve with the following characteristics.

   a. $\mu = 20$

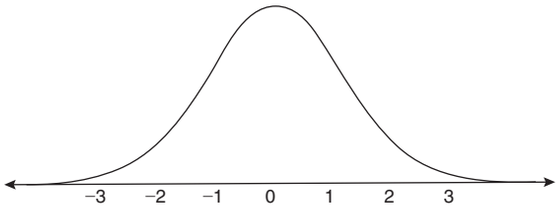
      $\sigma = 4$



The mean is 20 so the centre of the curve is at 20. The standard deviation is 4, so three standard deviations is 12. Three standard deviations below the mean of 20 is 8 and three standard deviations above the mean of 20 is 32. This means most of the data will fall between 8 and 32.

   b. $\mu = 0$

      $\sigma = 1$



The mean is 0 so the centre of the curve is at 0. The standard deviation is 1, so three standard deviations is 3. Three standard deviations below the mean of 0 is –3 and three standard deviations above the mean of 0 is 3. This means most of the data will fall between –3 and 3.

2. The following data is approximately normal. Use the mean and standard deviation of the data to sketch a normal curve that represents the data.

49	41	33	46	48	50	41	46	46	59
39	46	42	60	46	51	50	45	50	45
54	39	46	38	51	36	43	46	44	47
40	37	42	44	52	44	47	38	47	46

Use technology to determine the mean and standard deviation.

$\mu = 45.4$ and $\sigma = 5.7$. The centre of the curve will be at 45.4 and three standard deviations from the mean will occur at $45.4 - 3(5.7) = 28.3$ and $45.4 + 3(5.7) = 62.5$. This means most data will fall between 28.3 and 62.5.