

Review of Prerequisite Skills

If you need help with any of the skills listed in **purple** below, refer to Appendix A.

1. **Scatter plots** For each of the following sets of data, create a scatter plot and describe any patterns you see.

a)

x	y
3	18
5	15
8	12
9	10
12	8
15	4
17	1

b)

x	y
4	6
7	2
13	17
14	5
23	19
24	11
25	30
33	21
36	29
40	39
42	26
46	32

2. **Scatter plots** For each plot in question 1,
- graph the line of best fit and calculate its equation
 - estimate the x - and y -intercepts
 - estimate the value of y when $x = 7$
3. **Graphing linear equations** Determine the slope and y -intercept for the lines defined by the following equations, and then graph the lines.
- $y = 3x - 4$
 - $y = -2x + 6$
 - $12x - 6y = 7$
4. **Graphing quadratic functions** Graph the following functions and estimate any x - and y -intercepts.
- $y = 2x^2$
 - $y = x^2 + 5x - 6$
 - $y = -3x^2 + x + 2$

5. **Graphing exponential functions**

- Identify the base and the numerical coefficient for each of the following functions.
i) $y = 0.5(3)^x$ ii) $y = 2^x$ iii) $y = 100(0.5)^x$
- Graph each of the functions in part a).
- Explain what happens to the value of x as the curves in part b) approach the x -axis.

6. **Sigma notation** Calculate each sum without the use of technology.

a) $\sum_{i=1}^8 i$ b) $\sum_{i=1}^5 i^2$

7. **Sigma notation** Given $\bar{x} = 2.5$, calculate each sum without the use of technology.

a) $\sum_{i=1}^6 (i - \bar{x})$ b) $\sum_{i=1}^4 (i - \bar{x})^2$

8. **Sigma notation**

- Repeat questions 6 and 7 using appropriate technology such as a graphing calculator or a spreadsheet.
- Explain the method that you chose.

9. **Sampling (Chapter 2)** Briefly explain each of the following terms.

- simple random sample
- systematic sample
- outlier

10. **Bias (Chapter 2)**

- Explain the term *measurement bias*.
- Give an example of a survey method containing unintentional measurement bias.
- Give an example of a survey method containing intentional measurement bias.
- Give an example of sampling bias.