
What do students already know about the work of this chapter?

In the grade 10 academic course, students have

- determined and graphed the equation of a circle with centre $(0, 0)$ and radius r
- determined the vertex of a parabola from an equation and a graph
- identified the effect of simple transformations on the graph and equation of $y = x^2$
- recognized the roles of a , h , and k in $y = a(x - h)^2 + k$
- graphed the parabolas $y = a(x - h)^2 + k$ and $y = ax^2 + bx + c$
- used methods, such as completing the square, for moving between the general and standard forms of the equation of a parabola
- determined the equation of a line
- determined the point of intersection of two linear relationships graphically and algebraically
- determined formulas for the midpoint and the length of a line segment and solved multi-step problems involving these concepts
- solved quadratic equations by factoring and by using graphing calculators or graphing software
- solved quadratic equations using the quadratic formula

Using this Chapter with Functions / Functions and Relations Courses

This chapter is part of the Functions and Relations course, but not part of the Functions course. Teach this chapter in its entirety using instructional and assessment strategies suggested in the text and the *Teacher Resource*.

In some cases, such as a small school population or alternative educational situations, you may be faced with teaching both courses, Functions and Relations and Functions, to the same class. This situation is not ideal. The following suggestions are meant to help the teacher who may be faced with this dilemma.

- Guide students through this chapter, but include some independent study.
- Set aside one day per week for the students in the Functions course to work on additional applications of other chapters or to develop their skills, while you teach students in the Functions and Relations course a section of this chapter.
- Set up groups of students in the Functions and Relations course to independently study part of this chapter.
- Students in the Functions and Relations course could access additional online resources from the Nelson Mathematics student Web site at www.math.nelson.com, which would allow them to work independently.
- The Chapter Problem, challenges, and/or Performance Tasks for this chapter will help the teacher and students make connections with the various sections of the text if they are taught or studied over an extended period of time.