Chapters 4 to 5 Review

Using the Chapters 4 and 5 Review

Each question reviews different skills and concepts. The students might work independently to complete the Chapters 4 and 5 Review, then in pairs to compare solutions. Alternatively, the Chapters 4 and 5 Review could be assigned for reinforcing skills and concepts in preparation for a specific chapter Practice Test.

This is an opportunity for students to assess themselves by completing selected questions and checking their answers against the answers in the back of the student textbook. They can then revisit any questions with which they had difficulty.

Task

Modelling a Rotating Object

Teaching Suggestions

- The weight at the end of the string must be sufficient to keep the string taut during the rotation. The paper clip shown usually works well and provides convenient loops for tying the string.
- A reasonable estimate for the period can be obtained by timing a number of revolutions. Ten revolutions is usually sufficient. Ensure that students do not attempt to time just one revolution.
- The answer to part **i**) can be investigated quickly using a graphing calculator or spreadsheet. If an interactive whiteboard (such as the SMART Board™) is available, consider doing this as a class exercise when discussing the results of the task.

Hints for Evaluating a Response

Student responses are being assessed for the level of mathematical understanding they represent. As you assess each response, consider the following questions:

- Does the student demonstrate situational awareness, i.e., a sense of the position of the paper clip in relation to the modelling function?
- Does the student show an understanding of the role of phase shift in determining the value of the function at the starting time and position?
- Does the student understand why reversing the direction of rotation affects the equation for height versus angle, but not for height versus time?
- Does the student understand why reversing the direction of rotation affects the equations for distance versus angle and distance versus time?
- Does the student demonstrate a comprehension of why the rotational distance travelled is a linear and not a sinusoidal function?