ALBERTA DISTANCE LEARNING CENTRE
Mathematics 30-1
MAT3791
Workbook 2.3

Student's Questions and Comments

FOR STUDENT USE ONLY

Student Name:

_____

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Assigned to

_____

Marked by

_____

Date received

_____

Summary

	Marks Earned	Total Marks	Percent
Practice 2.3A	**I have ___ /8 and ___%**		
Practice 2.3B	**I have ___ /8 and ___%**		
Explore Your Understanding 2.3			

Teacher's Comments:

_____

Teacher's Signature

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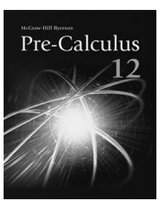

Pre-Calculus 12
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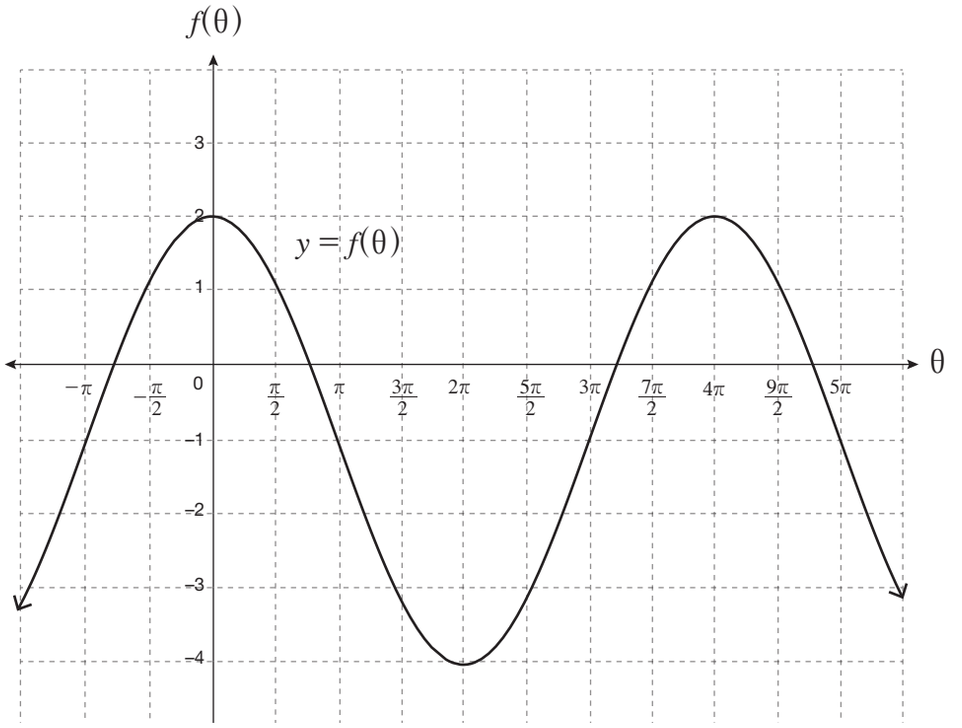
Explore Your Understanding Assignment 2.3

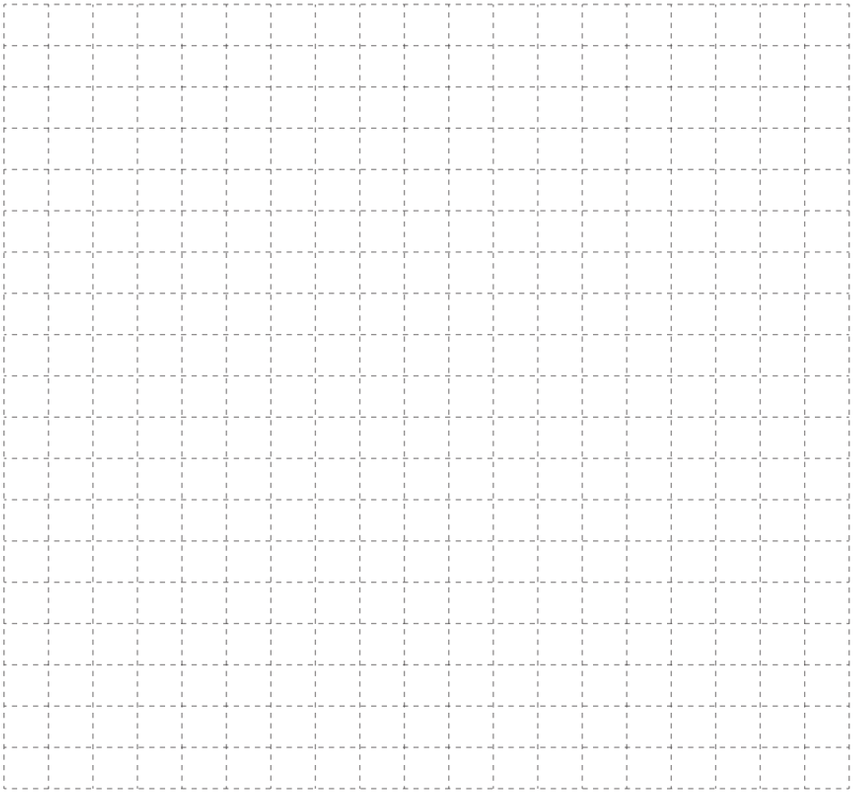
This assignment includes 17 marks. You are expected to complete **14 marks** worth of work. If you complete more than this, all completed questions will be used to assign a grade. For example, if you complete all 17 marks worth of work, your assignment total will be 17 instead of 14. You can also complete a question and label it "DO NOT MARK" if you are not confident in your work. Your teacher will then give feedback on your response, which will help clarify any misconceptions, but will not count it towards your required mark total. Please contact your teacher if you have any questions.

(4) 1. Use the graph provided to complete the table.



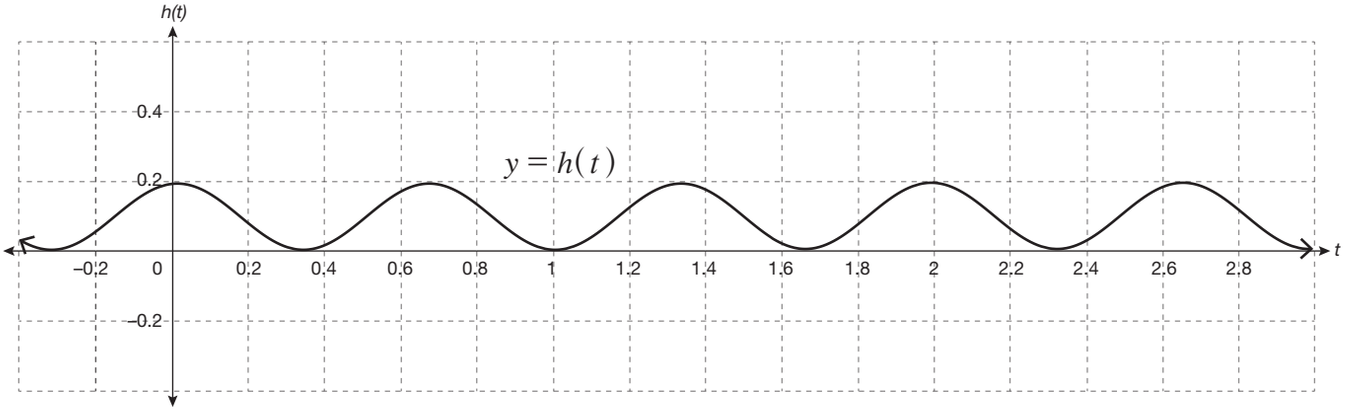
Domain	
Range	
Asymptote(s)	
Approximate zeros (Hint: Make sure to include all zeros in the domain. There are more than four.)	
Maximum	
Minimum	
Amplitude	
Period	

(1) 2. a. Sketch the graph of $y = \tan\theta, -180^\circ < \theta < 540^\circ$.



(1) b. Draw the line $y = \sqrt{3}$ on the graph, and list the points where the two functions intersect.

3. The graph shown represents the height, in centimetres, of a pendulum, at time t seconds, as it swings.



(1) a. Use characteristics of the graph to explain how the pendulum moves.

(1) b. How many times will the pendulum swing each minute?

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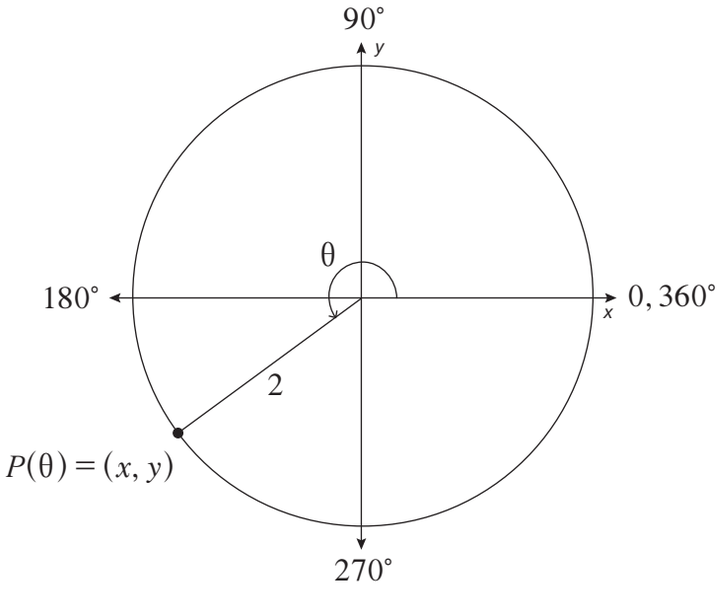
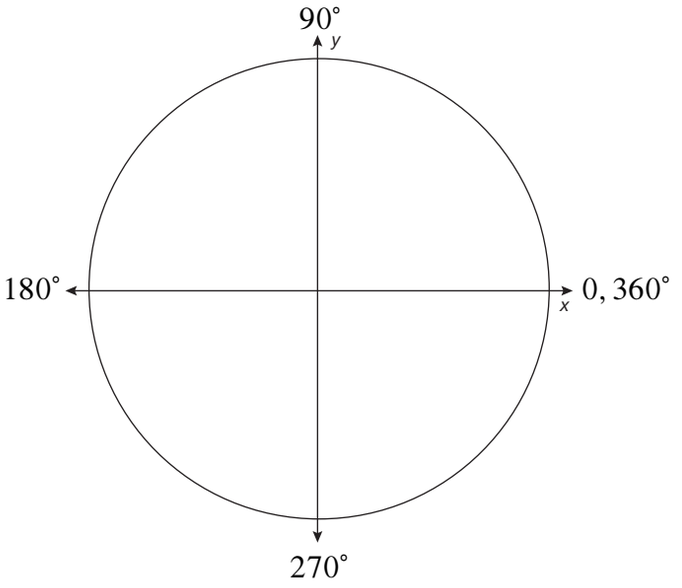
4. The trigonometric ratio $\sin\theta$ can be defined as the y-value of the intersection of the terminal arm of θ and the unit circle. Suppose a new function, $s(\theta)$, is defined as the y-value of the intersection of the terminal arm of θ and a circle with a radius of 2, as shown in the diagram.



(1) a. Sketch the graph of $y = s(\theta)$. Label the period, amplitude and midline on the graph.

(1) b. Show where 300° and $s(300^\circ)$ occur on on both the circle diagram below and the graph in part a.



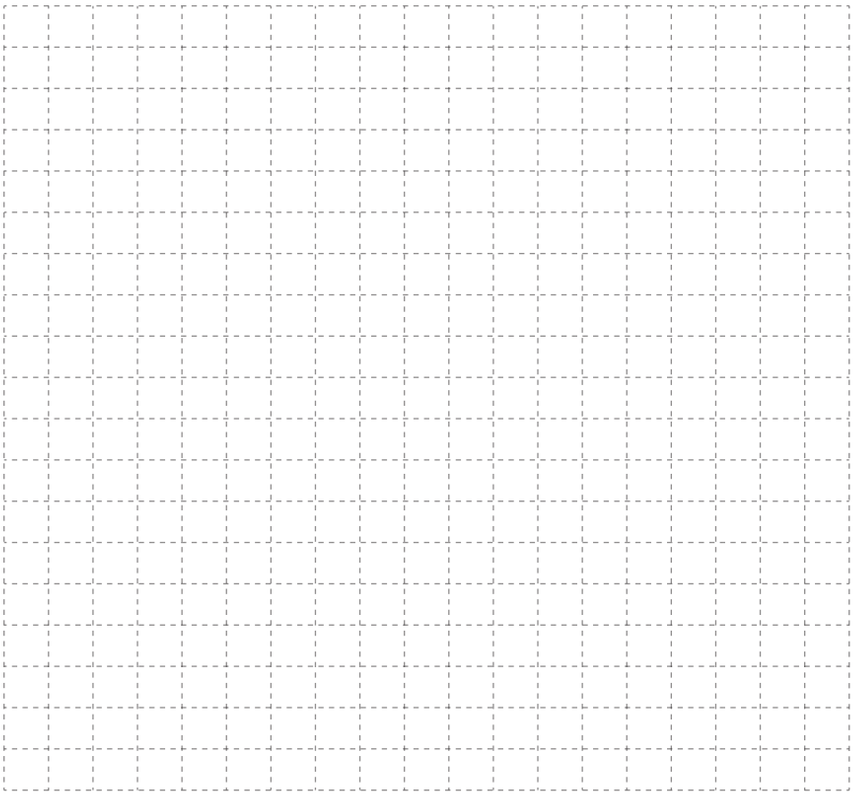
(1) c. Determine the value of $s(300°)$.

(2) 5. a. Algebraically solve $\sec^2\theta - 4 = 0,\ 0 \leq \theta \leq 2\pi$.

(1) b. Verify the solution graphically and explain what the graph represents.

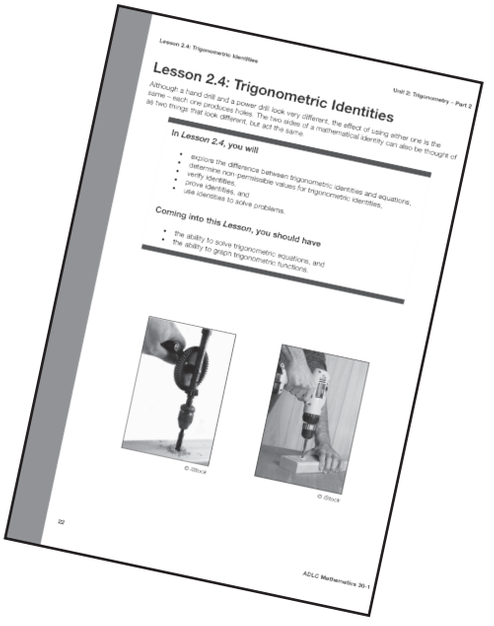
6. Consider the equation $\cos^2\theta + \tan^2\theta = 2$.

(2) a. Graphically determine a general solution to the equation, to the nearest hundredth of a radian.



(1) b. Verify the solution by substitution. Complete at least one verification for each set of coterminal angles.

When this workbook is complete, submit it using a method described at the beginning of this *Workbook*. Next, complete *Test Your Understanding Quiz 2.3* online in Moodle. When complete, return to the *Module* and begin *Lesson 2.4.*


Lesson 2.4: Trigonometric Identities

Unit 2: Trigonometry – Part II

Lesson 2.4: Trigonometric Identities

Although a hand drill and a power drill look very different, the effect of using either one is the same – each one produces holes. The two sides of a mathematical identity can also be thought of as two things that look different, but act the same.

In *Lesson 2.4*, you will

- explore the difference between trigonometric identities and equations,
- determine non-permissible values for trigonometric identities,
- verify identities,
- prove identities, and
- use identities to solve problems.

Coming into this *Lesson*, you should have

- the ability to solve trigonometric equations, and
- the ability to graph trigonometric functions.

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